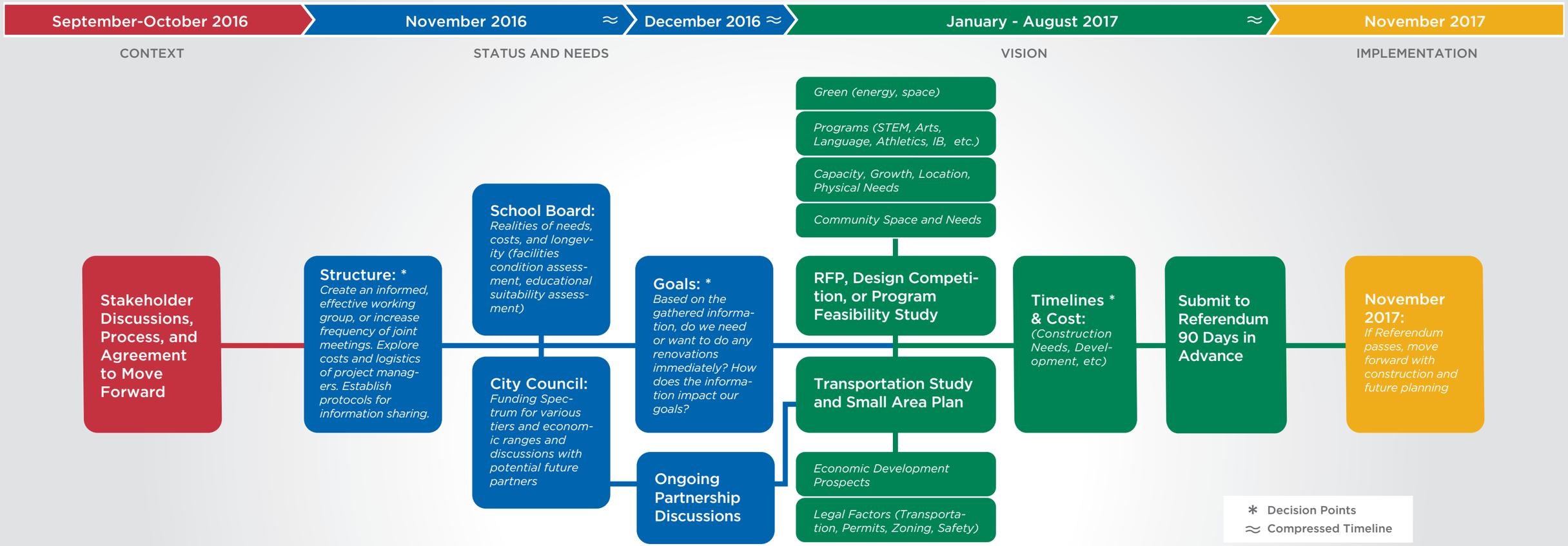
Preliminary Roadmap



Structure:

1. Do the needs of this process necessitate a smaller working group?
   a. If so, who are the liaisons from the School Board and City Council?
   b. How should the Planning Commission and Economic Development Authority be incorporated for feedback and evaluation of timelines and procedures?
   c. Through what channels and frequency will this group report back to the larger bodies?
   d. How is this different than the last steering committee effort?
2. Is a project manager needed to internally advance this process?
3. How will community members be updated along the way, and how will this process incorporate their feedback?

School Board Fact Finding:

4. What is the current capacity of the high school?
5. What is the school's current enrollment?
6. What are the current enrollment projections, with and without development included?
   a. Where is projected growth focused (e.g., all grade levels, or key entry points)?
7. What is the current status of the high school?
   a. What is the status of classrooms and learning environments?
   b. What is the status of the basic infrastructure, including HVAC, boiler, ceiling/roofing, mold, and more?
   c. What is the longevity of these systems?
8. What is the cost of fixing any urgent needs?
   a. What are the projected costs for future, non-urgent repairs?
9. What additional renovations would be needed at the high school over the coming years (such as gymnasium, auditorium, additional class wings, specialized learning environments, etc.)?
   a. What is the projected cost of each renovation?
   b. How do they contribute to the mission and vision of the school?
10. Could we accomplish our school goals without giving up any land to develop?
11. What could the school system accomplish at certain funding tiers? What could be achieved at $40, $60, $80, $100, or $120 million?
    a. Can we break down desired features into groupings of amenities and options to display opportunity costs and trade-offs?
    b. Which needs are critical or essential?
    c. Which needs are truly additive or supplementary?
12. Do we need to account for potential future needs that are non-high school and middle school related (like future elementary needs)?

City Council Fact Finding:

13. What is the economic spectrum of affordability from a funding perspective?
    a. How much can we afford right now with our current policies?
    b. If we break policy what can we afford? What are the repercussions of breaking policy?
    c. How much could we afford if we change policy?
    d. Are there TIFs, special tax districts, or additional creative funding methods available?
    e. Is $120 million possible? What are the bonding and development implications to ensure a stable future of Falls Church?
    f. What are the tax implications of each tier across the spectrum?
14. What could the school system accomplish at certain funding tiers? What could be achieved at $40, $60, $80, $100, or $120 million?
    a. Can we break down desired features into groupings of amenities and options to display opportunity costs and trade-offs?
    b. Which needs are critical or essential?
    c. Which needs are truly additive or supplementary?
15. What do various debt levels mean for Falls Church finances?
16. Are there additional legal factors like zoning, safety, and transportation to consider?

Goals:

17. Could we address our school issues without new construction?
    a. What is the opportunity cost of not developing the site?
18. What are the political/referendum realities we need to address for any project to move forward? Do we need to achieve something for a November 2017 referendum? Is this timeline realistic?
19. How will we accommodate students and school needs during this time?
20. Do we need to renovate now to provide more time for visioning and a larger process in the future?
21. At what point will the School Board and City Council address the land ownership for this site?
22. How can ongoing partner discussions impact planning for this site?
    a. Can partners support the high school needs in the short term through parking or facility space?
    b. Is there an appetite for greater partnership exploration in the long-term for programming or future development?

Structure

1. **Do the needs of this process necessitate a smaller working group?**
    a. **If so, who are the liaisons from the School Board and City Council?**
    b. **How should the Planning Commission and Economic Development Authority be incorporated for feedback and evaluation of timelines and procedures?**
    c. **Through what channels and frequency will this group report back to the larger bodies?**
    d. **How is this different than the last steering committee effort?**

Answers:

- **Yes. On 11.1.16, the joint City Council and School Board agreed to form a working group to begin gathering data to seek answers to the questions on the preliminary roadmap.**
- **Representatives from the City Council are Letty Hardi and Marybeth Connolly.**
- **Representatives from the School Board are John Lawrence and Erin Gill.**
- **The working group charter is included in this tab. The group meets regularly (weekly) through December 2016. Meetings are public and all are available to attend.**
- **The working group can elect to invite members of the Planning Commission or Economic Development Authority specifically to any meeting.**
- **This group will provide updates at each joint session.**
- **This is not a "steering committee" but a group that is aggregating and synthesizing data to best inform the direction of the joint bodies.**

Structure

2. Is a project manager needed to internally advance this process?
a. Is there a budget in this process for one?

Answers:

- **The need for a project manager is still being explored and the city is considering an initial job description.**
- **The working group has agreed to move forward and address this question as a future recommendation when more information is compiled.**

Structure

3. How will community members be updated along the way, and how will this process incorporate their feedback?

Answers:

- **The working groups meetings are posted, public meetings open to all.**
- **Following the information gathering stage, additional community engagement will be a planned as the process moves forward.**
- **This working group agrees to revisit this question following the compilation of additional information and more forward movement.**

School Board Fact Finding

4. What is the current capacity of the High School?

Answers:

- **The current building capacity for public space is 780 students.**
- **The current classroom capacity has been expanded to 876 students by converting lab space and conference space into modified classrooms to accommodate an additional 96 students.**
- **The DRAFT FY18 CIP, included in this tab, contains more information on Page 19.**

Grades 9-12
George Mason High School

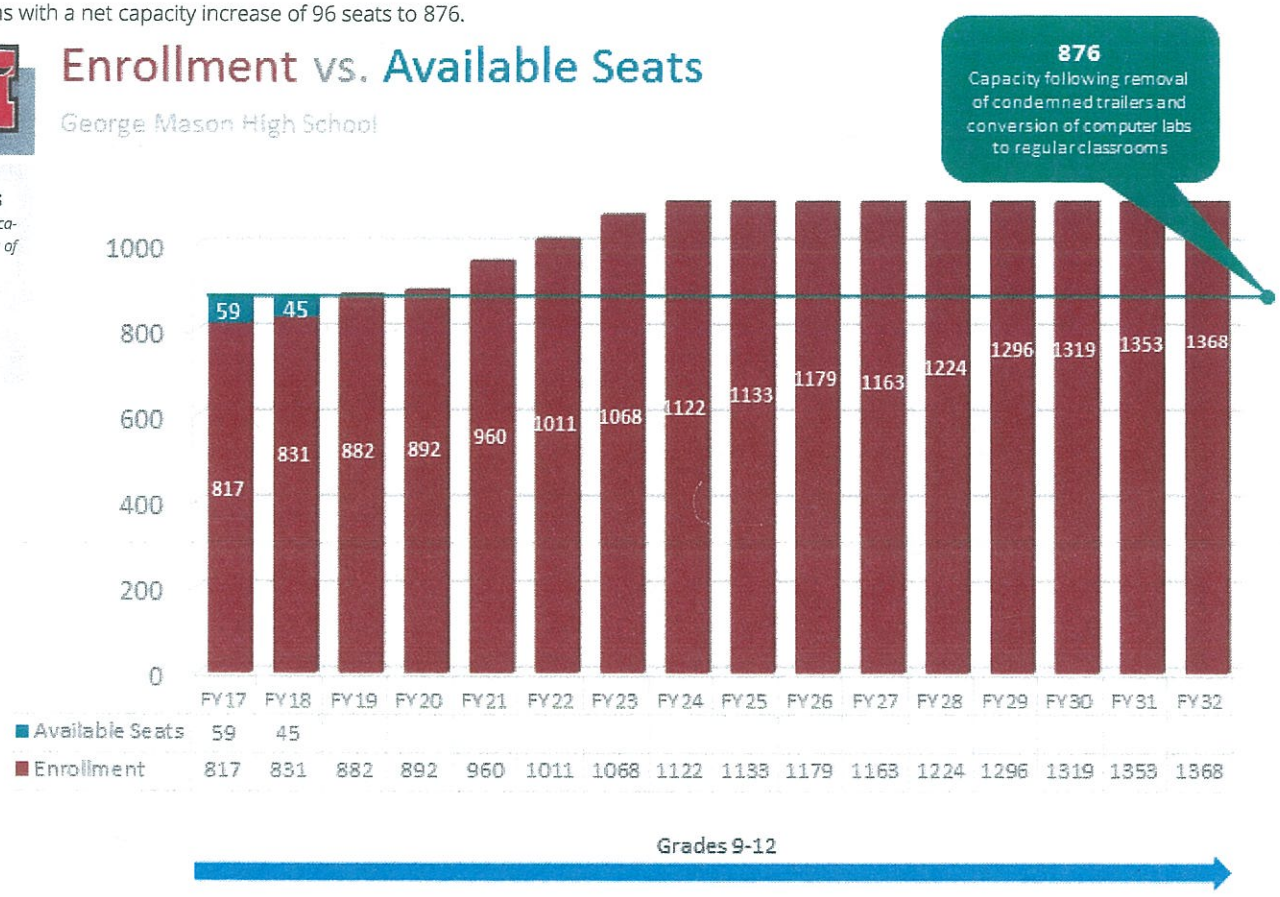
George Mason High School has an actual building capacity of 780 students. The building was well over capacity through 2012-2013, and then the expansion at Thomas Jefferson Elementary allowed grade shifts of 8th grade out of high school, and 5th grade out of middle school. These grade shifts had a positive effect on lengthening the ability of George Mason to handle current enrollment pressures for a few more years. During the summer of 2016, six classroom trailers were determined to be unsafe and six classrooms were returned to the main building. With the loss of the trailers, former computer labs and conference space were converted into classrooms with a net capacity increase of 96 seats to 876.

George Mason 2016-2017

Actual Building Capacity: **876 students**
(the conversion of computer lab and training space has increased capacity by 96 seats despite the loss of 6 trailers during the summer of 2016)

36.5 Rooms x 24 students = 876

Enrollment vs. Available Seats
George Mason High School



School Board Fact Finding

5. What is the school's current enrollment?

Answers:

- **The current enrollment at George Mason is 817. This number was reported on 9/30/16.**
- **This enrollment number includes out-placed students, of which there are 26 total district-wide. The out-placed student count is not a static number; it varies throughout the year as students and families deal with health and personal issues.**
- **This tab contains supporting documents:**
  - **Official 2016-17 FCCPS Enrollment by School**
  - **FCCPS Monthly Membership 2016-17:**
    - **This document is included to illustrate that FCCPS tracks its numbers each month; there is typically slight fluctuation throughout the school year to End of Year numbers.**
  - **FCCPS Students by Dwelling Unit:**
    - **This document illustrates student enrollment by development; red boxes indicate decrease in enrollment for 2017, whereas green boxes indicate growth.**
    - **Because this document is a DRAFT and awaiting final numbers for single-family homes, the yellow highlighted box is still being confirmed. The yellow highlight will disappear when the number is finalized and the report no longer in draft form.**

FCCPS Enrollment Officially Jumps 5.9%

Written by John Brett **Published in:** Administration **On:** 02 November 2016 **Read:** **55** times

Falls Church City Public Schools is growing like it's 1955. The official student count for the 2016-17 school year, upon which state funding is calculated, is 2685. That is 151 additional students over last year and the largest single year increase since the first McDonald's restaurant opened 61 years ago and FCCPS added 178 new students.

This year's 5.91% increase is spread throughout the five schools - and in all but three grades:

Official 2016-17 Enrollment by School

Jessie Thackrey (Pre-Kindergarten): 74 (+17)

Mount Daniel (Kindergarten - Grade 1): 382 (+33)

Thomas Jefferson (Grade 2-5): 824 (+40)

Mary Ellen Henderson (Grade 6-8): 588 (+31)

George Mason (Grade 9-12): 817 (+30)

You can view enrollment changes by school, by grade, and by year by visiting: **www.fccps.org/enrollment**

Like Be the first of your friends to like this.

Falls Church City Public Schools Monthly Membership 2016-17

School	Grade	9/30/14	EOY 14/15	9/30/15	EOY 15/16	9/30/16	10/31/16	11/30/16	12/21/16	1/31/17	2/28/17	3/31/17	4/30/17	5/31/17	6/22/17
JTP	**PK**	**45**	**57**	**57**	**63**	**74**	**76**								
MD	**K**	159	168	176	180	191	189								
	1	205	211	173	164	191	192								
	Total	**364**	**379**	**349**	**344**	**382**	**381**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
TJ	**2**	184	191	217	207	177	175								
	3	202	204	192	184	230	232								
	4	172	175	198	199	196	197								
	5	200	201	177	169	221	222								
	Total	**758**	**771**	**784**	**759**	**824**	**826**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
MEH	**6**	183	177	205	203	176	177								
	7	170	167	177	176	215	217								
	8	185	184	175	169	197	197								
	Total	**538**	**528**	**557**	**548**	**588**	**591**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
GMHS	**9**	192	196	192	198	203	203								
	10	207	205	203	200	205	207								
	11	179	182	201	195	204	205								
	12	172	170	191	191	205	206								
	Total	**750**	**753**	**787**	**784**	**817**	**821**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
System	**Grand Total**	2455	2488	2534	**2498**	**2685**	**2695**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
		2477 with out-placed students	Includes out-placed students	Includes out-placed students	Includes out-placed students	Includes out-placed students	Includes out-placed students	Includes out-placed students	Includes out-placed students	Includes out-placed students	Includes out-placed students	Includes out-placed students	Includes out-placed students	Includes out-placed students	Includes out-placed students

FCCPS Students by Dwelling Unit

Development	Units	1989	1994	1999	2002	2013	2014	2015	2016	2017	Range of Ratios Since 1989
Mid-rise Apartments											
Park Towers	97	6	6	6	8	4	9	11	17	13	0.041 to 0.175
The Madison	100	4	4	13	23	7	4	9	8	10	0.040 to 0.230
Oakwood	576	12	20	45	67	157	177	142	164	213	0.021 to 0.370
Roosevelt Towers	191	3	14	26	36	46	52	54	52	51	0.016 to 0.283
Merrill House	159	8	12	22	37	52	62	63	52	57	0.050 to 0.396
Broadfalls	113	3	9	7	12	23	27	21	28	25	0.027 to 0.248
Mid-rise Apartment Subtotal:	**1,236**	**36**	**65**	**119**	**183**	**289**	**331**	**300**	**321**	**369**	**0.029 to 0.299**
Low-rise Apartments											
Falls Chase* 1130-1134 S. Washington	50	3	6	17	18	11	13	13	11	11	0.060 to 0.360
Falls Plaza* Birch/Haycock	72	6	6	15	14	15	16	19	22	21	0.083 to 0.306
Lee Square Chanel Terrace	115	19	27	28	35	23	17	20	24	29	0.148 to 0.304
Westbrook Com. Ellison St. (The Fields)	96	72	72	57	64	76	90	99	105	101	0.594 to 1.094
Crossman 403 N. Maple Maple/Columbia	27	0	2	3	3	4	1	4	6	7	0.000 to 0.259
Virginia Village 300 S.Maple Gibson/Shirley	81	5	5	15	12	7	10	13	12	3	0.037 to 0.185
Liberty Street 702 Washington St.	4	1	0	0	0	0	0	0	1	1	0.000 to 0.250
Marriot Suites	0	N/A	N/A	0	0	0	5	7	0	0	
Motels		0	0	0	0	0	3	5	2	0	
Misc. Apartments	0	0	0	0	0	0	8	8	0	6	
Low-rise Apartment Subtotal:	**445**	**106**	**118**	**135**	**146**	**136**	**163**	**188**	**183**	**179**	**0.238 to 0.422**
Townhouses											
Gresham Pl.	33	N/A	2	3	4	6	5	6	4	2	0.000 to 0.182
Park Avenue/ PA Ave. & Riley	26	7	5	7	12	29	17	18	13	8	0.192 to 1.115
Rees Place	34	N/A	N/A	20	13	15	15	15	19	22	0.000 to 0.647
Wrens Way	18	2	4	0	1	7	11	13	15	12	0.000 to 0.833
Tollgate Way	30	3	6	8	4	6	6	8	10	10	0.100 to 0.333
Church View	16	N/A	N/A	7	4	0	6	6	3	2	0.000 to 0.438
Governors Sq., Bishops, Garden, & Thurber Cts.	66	5	8	12	12	10	22	25	29	33	0.076 to 0.500
Gates W. Falls	14	N/A	0	0	1	1	0	0	1	1	0.000 to 0.071
Cherrywood	20	8	5	15	10	12	12	14	14	16	0.250 to 0.800
Jennifer Ct. & Steeples Ct.	11	3	0	4	1	7	12	13	14	13	0.000 to 1.273
Rosewood (inclu. S. Wash. 1200's)	16	2	1	5	10	7	8	7	13	13	0.313 to 0.813
Trammell's Gate W. Great Falls	14	2	2	2	2	7	1	1	1	1	0.071 to 0.500
Katie Court	15	1	2	2	1	2	2	2	2	4	0.067 to 0.267
Ellison Square		0	0	0	0	0	7	9	9	7	
Townhouse Subtotal:	**313**	**33**	**35**	**85**	**75**	**109**	**124**	**137**	**147**	**144**	**0.105 to 0.470**
Mixed-Unit											
Cherry Hill (194 THs) Winter Hill (200 condos)	394	86	102	125	136	114	116	133	143	166	0.218 to 0.421
Whittier (62 TH &13 SFD)	75	N/A	N/A	17	31	32	37	35	36	40	0.227 to 0.533
Mixed-Unit Subtotal:	**469**	**86**	**102**	**142**	**167**	**146**	**153**	**168**	**179**	**206**	**0.303 to 0.439**

DRAFT

10/31/2016

FCCPS Students by Dwelling Unit

Development	Units	1989	1994	1999	2002	2013	2014	2015	2016	2017	Range of Ratios Since 1989
Newer Mixed Use											
Pearson	230	N/A	N/A	N/A	N/A	92	109	120	125	127	0.400 to 0.552
Read	26	N/A	N/A	N/A	N/A	1	1	0	1	1	0.000 to 0.038
Byron	90	N/A	N/A	N/A	N/A	9	13	13	9	9	0.100 to 0.144
Spectrum	189	N/A	N/A	N/A	N/A	16	16	19	17	21	0.085 to 0.111
Broadway	80	N/A	N/A	N/A	N/A	10	10	11	11	11	0.125 to 0.138
Northgate	105	N/A	N/A	N/A	N/A	N/A	N/A	20	25	25	0.190 to 0.238
West Falls Church (301 W. Broad)	285	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	20	0.070 to 0.070
Newer Mixed Use Subtotal:	**1,005**	**0**	**0**	**0**	**0**	**128**	**149**	**183**	**188**	**214**	**0.127 to 0.213**
Total Multi-Unit Students:	**3,468** (# Units)	**261**	**320**	**481**	**571**	**808**	**920**	**976**	**1,018**	**1,112**	**0.075 to 0.321**
Overall Total Students:		**1,191**	**1,343**	**1,682**	**1,802**	**2,283**	**2,427**	**2,470**	**2,548**	**2,675**	
Tuition students		37	29	41	6	11	8	14	14	13	
Single Family Detached:		**893**	**994**	**1,160**	**1,225**	**1,464**	**1,499**	**1,480**	**1,516**	**1,550**	**0.410 to 0.647**
1989	2,178	893									
1994	2,179		994								
1999	2,198			1,160							
2002	2,228				1,225						
2013	2,351					1,464					
2014	2,351						1,499				
2015	2,351							1,480			
2016	2,396								1,516		
2017	2,396									1,550	

Overall student growth 1989 to 2017 = 1,508 (Does not include tuition students)

Multi-Unit student growth 1989 to 2017 = 851

Single Family Detached student growth 1989 to 2017 = 657

DRAFT

School Board Fact Finding

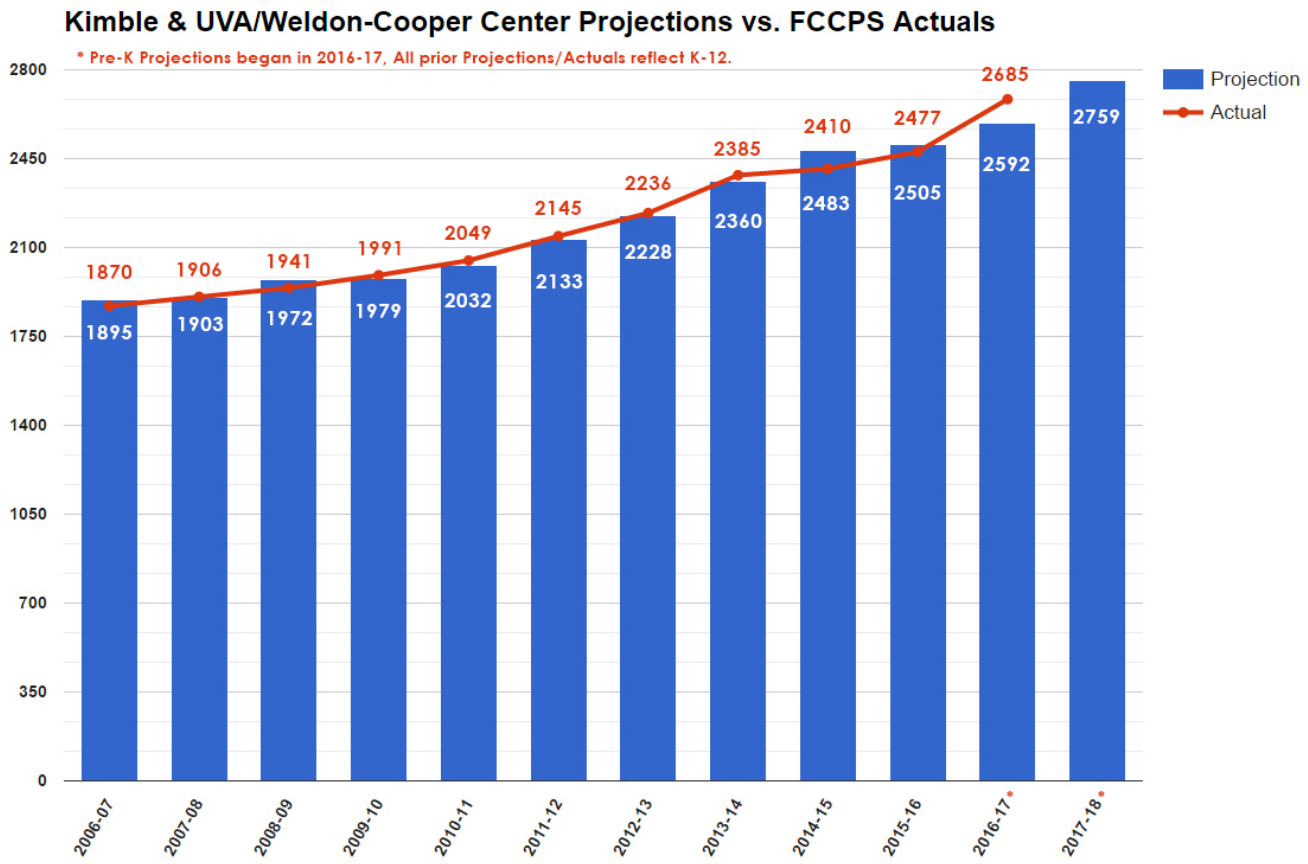
6. What are the current enrollment projections, with and without development included?

Answers:

- **Weldon Cooper numbers do not involve a discrete pipeline of mixed-use projects, but they do reflect and incorporate the average yearly growth over the last 5 and 10 years. Their calculations are based on birth rate calculations and cohorts; new students from developments are integrated into cohort numbers the next year.**
- **Implication: projected enrollment of approximately 1368 students in the high school by 2031-32. This is the WC number that does not incorporate development.**
- **This tab contains supporting documents:**
  - **FCCPS Enrollment Projections v. Actuals**
    - **This chart plots the actual enrollment of FCCPS against projections going back 10 years.**
    - **Prior to 2011, the projection models were done internally by Hunter Kimble.**
    - **In 2011, experts Weldon Cooper began doing the enrollment projections.**
    - **The past year actual growth numbers indicate 3.7% average yearly growth over the last 10 years, and 4.29% average yearly growth in the last 5 years.**
  - **Weldon Cooper methodology for school enrollment projections in Falls Church.**
    - **The longest forecast (15 years) anticipates 1368 students by 2031-32**
    - **By 2027-28, the projected enrollment for the school is 1,224, surpassing a capacity of 1200 students.**
  - **FCCPS Projected Seats per Building/Location: displays the Weldon Cooper projected enrollment numbers overlaid with approved and potential-future developments. This document blends WC projections with Falls Church city development forecasts to produce low- and high-range estimates.**

FCCPS Enrollment Projections vs. Actuals

Kimble & UVA/ Weldon Cooper Center



Accuracy of Projections

In the last **10 years**	In the last **5 years**
Average Yearly Variance: **3.8 students**	Average Yearly Variance: **5 students**
Average Yearly % Variance: **1.28%**	Average Yearly % Variance: **1.81%**
Average Yearly Enrollment Growth: **3.7%**	Average Yearly Enrollment Growth: **4.29%**

FCCPS Projected Vs. Actual Growth

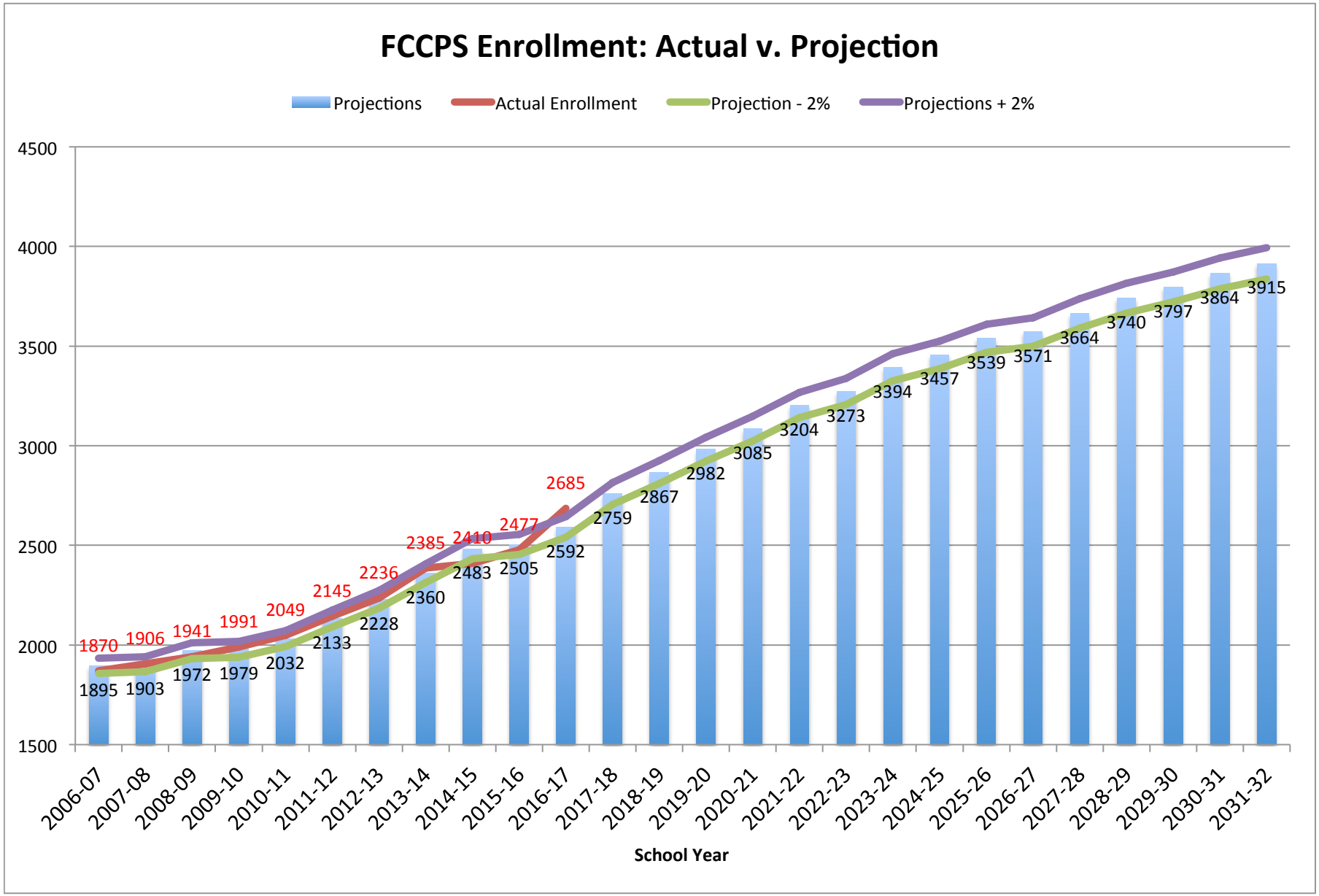
2006-2018

Year	Projection	Actual	Variance	Projected Growth	Actual Growth	Grades
2006-07	1895	1870	-25	2.32%	0.97%	k-12
2007-08	1903	1906	3	0.42%	1.93%	k-12
2008-09	1972	1941	-31	3.63%	1.84%	k-12
2009-10	1979	1991	12	0.35%	2.58%	k-12
2010-11	2032	2049	17	2.68%	2.91%	k-12
2011-12	2133	2145	12	4.97%	4.69%	k-12
2012-13	2228	2236	8	4.45%	4.24%	k-12
2013-14	2360	2385	25	5.92%	6.66%	k-12
2014-15	2483	2410	-73	5.21%	1.05%	k-12
2015-16	2505	2467	-38	0.89%	2.37%	k-12
2016-17	2537	2611	74	4.23%	5.84%	k-12
2017-18	2759					
	Last 10 Year Average		0.9	3.28%	3.41%	
	Last 5 Year Average		-0.8	4.14%	4.03%	

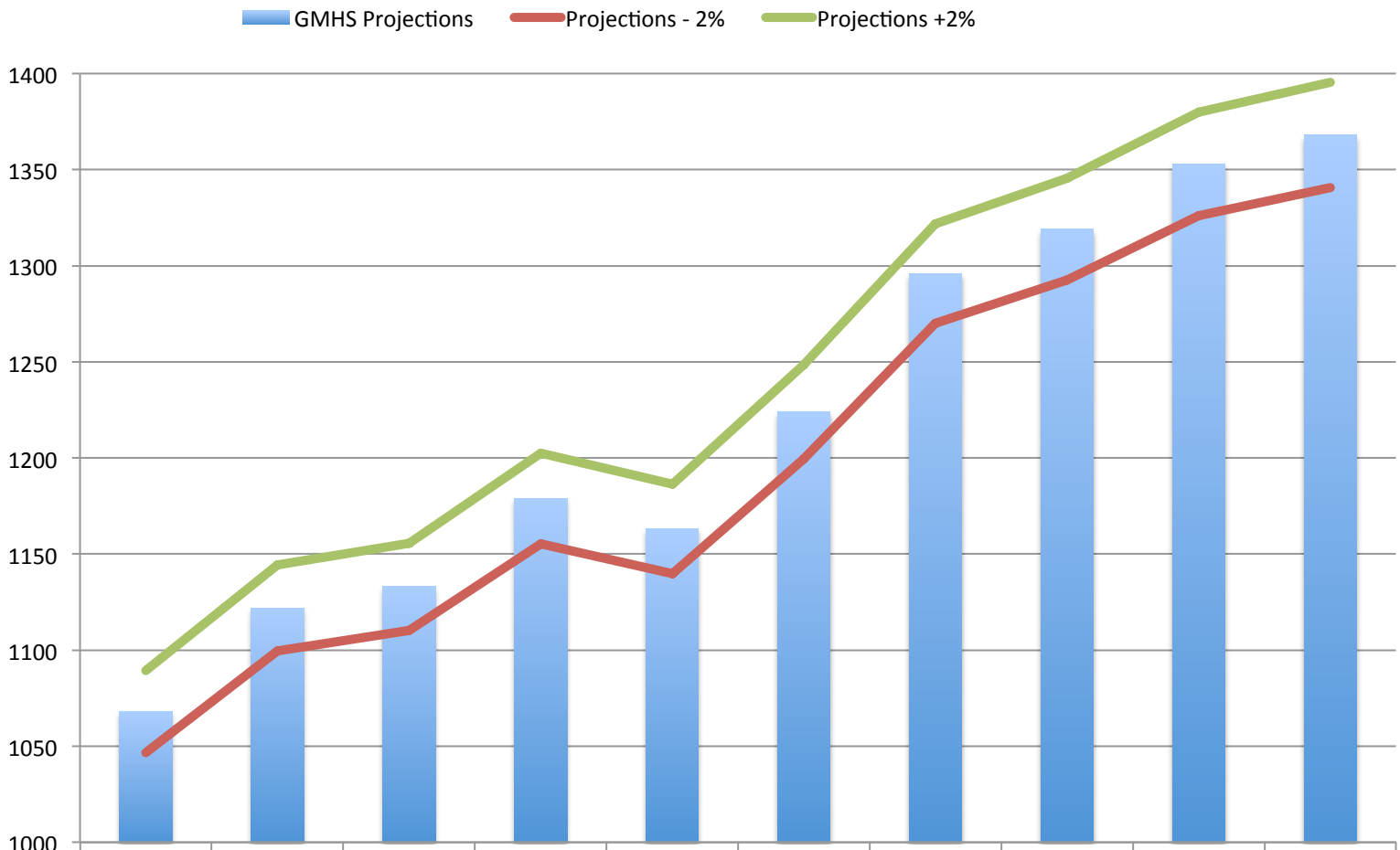
Kimble Projections

UVA/Weldon Cooper

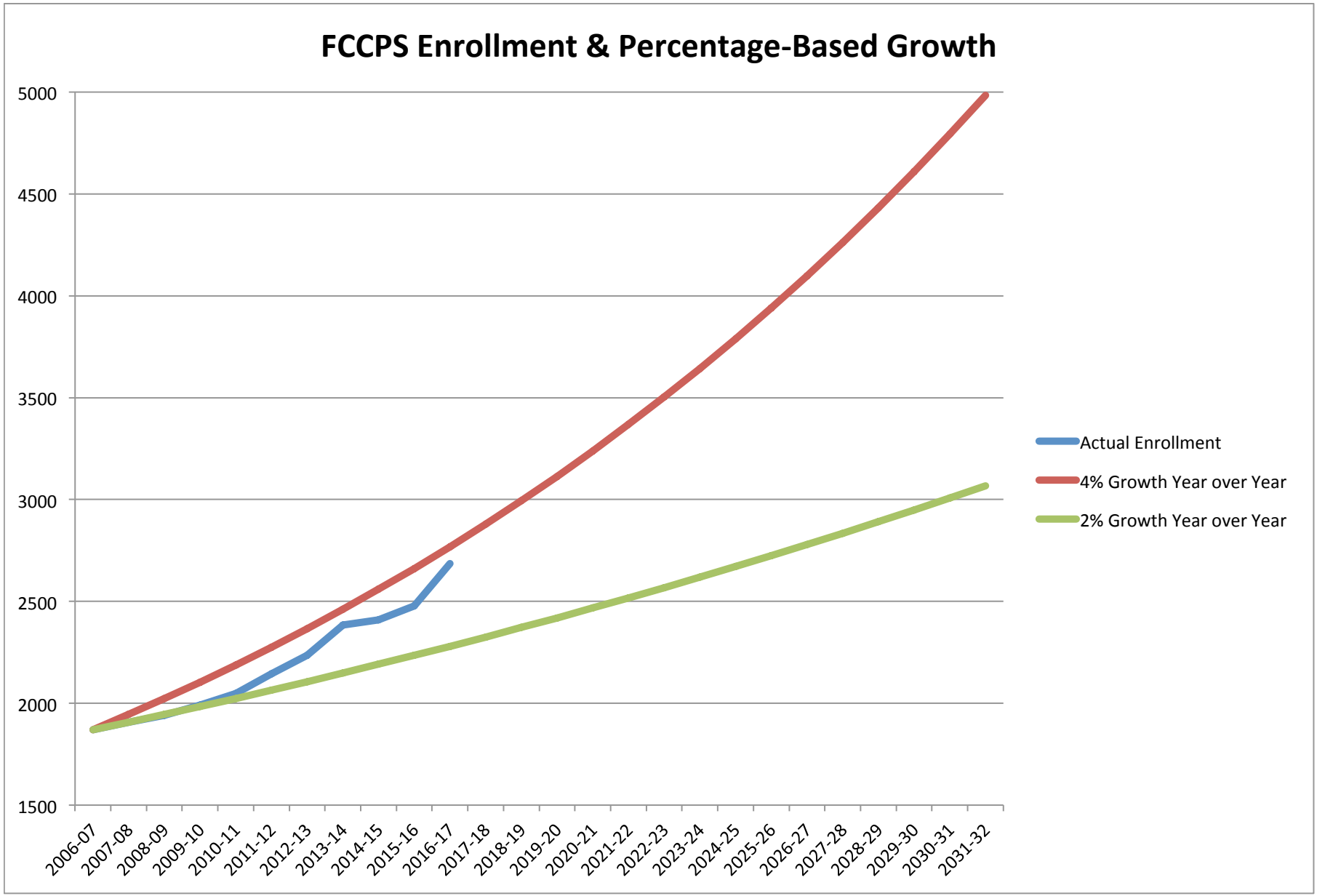
Actuals only include K-12 to match the scope of the prior year's projection


FCCPS Enrollment: Actual v. Projection
Projections
Actual Enrollment
Projection - 2%
Projections + 2%
4500
4000
3500
3000
2500
2000
1500
1870
1906
1941
1991
2049
2145
2236
2385
2410
2477
2685
1895
1903
1972
1979
2032
2133
2228
2360
2483
2505
2592
2759
2867
2982
3085
3204
3273
3394
3457
3539
3571
3664
3740
3797
3864
3915
2006-07
2007-08
2008-09
2009-10
2010-11
2011-12
2012-13
2013-14
2014-15
2015-16
2016-17
2017-18
2018-19
2019-20
2020-21
2021-22
2022-23
2023-24
2024-25
2025-26
2026-27
2027-28
2028-29
2029-30
2030-31
2031-32
School Year

GMHS Enrollment Projections



	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	2031-32
GMHS Projections	1068	1122	1133	1179	1163	1224	1296	1319	1353	1368
Projections - 2%	1046.64	1099.56	1110.34	1155.42	1139.74	1199.52	1270.08	1292.62	1325.94	1340.64
Projections +2%	1089.36	1144.44	1155.66	1202.58	1186.26	1248.48	1321.92	1345.38	1380.06	1395.36


FCCPS Enrollment & Percentage-Based Growth
5000
4500
4000
3500
3000
2500
2000
1500
2006-07
2007-08
2008-09
2009-10
2010-11
2011-12
2012-13
2013-14
2014-15
2015-16
2016-17
2017-18
2018-19
2019-20
2020-21
2021-22
2022-23
2023-24
2024-25
2025-26
2026-27
2027-28
2028-29
2029-30
2030-31
2031-32
Actual Enrollment
4% Growth Year over Year
2% Growth Year over Year

Projected Number of Student Seats Needed by School Building/Location

	2014-15 Actual	2015-16 Actual	2016-17 Actual	2017-18 WC Projection		2018-19 WC Projection		2019-20 WC Projection		2020-21 WC Projection		2021-22 WC Projection		2022-23 WC Projection		2023-24 WC Projection		2024-25 WC Projection		2025-26 WC Projection		2026-27 WC Projection		2027-28 WC Projection		2028-29 WC Projection		2029-30 WC Projection	
JTPS	45	51	71		0		0		0		0		0		0		0		0		0		0		0		0		0
MD	364	349	381	391	391	610	610	640	640	661	661	670	670	657	657	665	665	674	674	684	684	694	694	704	704	713	713	723	723
TJ	758	780	822	835	835	663	663	652	652	681	681	710	710	747	747	770	770	781	781	764	764	775	775	785	785	797	797	808	808
MEH	538	554	588	641	641	640	640	728	728	716	716	744	744	732	732	766	766	798	798	838	838	865	865	877	877	858	858	870	870
GMHS	751	775	808	831	831	882	882	893	893	960	960	1,011	1,011	1,068	1,068	1,122	1,122	1,133	1,133	1,179	1,179	1,163	1,163	1,224	1,224	1,296	1,296	1,319	1,319
TOTAL	**2,456**	**2,509**	**2,670**	**2,698**	**2,698**	**2,795**	**2,795**	**2,913**	**2,913**	**3,018**	**3,018**	**3,135**	**3,135**	**3,204**	**3,204**	**3,323**	**3,323**	**3,386**	**3,386**	**3,465**	**3,465**	**3,497**	**3,497**	**3,590**	**3,590**	**3,664**	**3,664**	**3,720**	**3,720**
Organic Growth from 2016-17:				28	28	125	125	243	243	348	348	465	465	534	534	653	653	716	716	795	795	827	827	920	920	994	994	1,050	1,050
Organic Growth + ED Grwoth:				44	89	166	231	347	454	515	664	695	886	827	1,060	946	1,179	1,009	1,242	1,088	1,321	1,120	1,353	1,213	1,446	1,287	1,520	1,343	1,576
				Low	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High
APPROVED: 301 W Broad (additional):				16	61	16	61	16	61	16	61	16	61	16	61	16	61	16	61	16	61	16	61	16	61	16	61	16	61
APPROVED: Tinner Hill / Lincoln:						25	45	25	45	25	45	25	45	25	45	25	45	25	45	25	45	25	45	25	45	25	45	25	45
APPROVED: Mason Row:								63	105	63	105	63	105	63	105	63	105	63	105	63	105	63	105	63	105	63	105	63	105
FUTURE: Washington & Broad:										63	105	63	105	63	105	63	105	63	105	63	105	63	105	63	105	63	105	63	105
FUTURE: New Campus Project 1:												63	105	63	105	63	105	63	105	63	105	63	105	63	105	63	105	63	105
FUTURE: New Campus Project 2:														63	105	63	105	63	105	63	105	63	105	63	105	63	105	63	105
TOTAL Additional Students: (Cumulative Over Time)				**16**	**61**	**41**	**106**	**104**	**211**	**167**	**316**	**230**	**421**	**293**	**526**	**293**	**526**	**293**	**526**	**293**	**526**	**293**	**526**	**293**	**526**	**293**	**526**	**293**	**526**

WELDON COOPER
CENTER FOR PUBLIC SERVICE
University of Virginia

SCHOOL ENROLLMENT PROJECTION METHODOLOGY FOR FALLS CHURCH PUBLIC SCHOOLS

Upon request by Falls Church City Public Schools, the Weldon Cooper Center produced 15-year school enrollment projections in October 2016.

DATA USED IN MAKING THE PROJECTIONS

The data used in creating a set of school enrollment projections are births, obtained from the VA Center for Health Statistics and geo-coded by staff, as well as student enrollment counts, provided by the school division and compiled from VA Department of Education.

GRADE-PROGRESSION METHOD

The birth data are used to make a projection of kindergarten enrollment. The number of births from a given year is used to project the number of kindergarten students five years later (when the children are old enough to begin school). The school enrollment data, which is obtained for each grade separately, are used to predict the next year's enrollment using grade-progression ratios.

A grade-progression ratio is the number of students in a particular grade divided by the number of students in the previous grade in the previous school year. For example, if the current number of 2nd grade students is divided by last year's 1st grade students, the result is the 2nd grade/1st grade-progression ratio. The grade-progression ratio captures a cohort of children as they move forward in time and progress from grade to grade.

Grade-progression ratios between every pair of consecutive grades are calculated, but because these grade-progression ratios can sometimes fluctuate considerably from one year to another, it is important to create additional sets of grade-progression ratios to determine which set is most dependable. The Cooper Center does this by creating an average grade-progression ratio based on the most recent three years' and five years' data. All three grade-progression ratios are applied to the last known school enrollment data to obtain forecasts for the following year, which then become the basis for forecasting enrollment the year after. The single- and multiple-year grade progression ratios are compared and the middle series is selected. For Falls Church, the five-year average was used to produce the final school enrollment projections. This average best accounts for short-term and long-term enrollment trends.

Projecting enrollment over long periods of time has higher margins for error. In general, actual enrollment will vary more the further out the projection goes.

If you have any questions, please contact Hamilton Lombard:
(434) 982-5698
hl2qs@virginia.edu

UVA/Weldon Cooper Center

Falls Church Public Schools Enrollment Projections as of September 30th by Year

	Pre-K	K	1	2	3	4	5	6	7	8	9	10	11	12	Total PreK-12
2016-17	**74**	191	191	177	230	196	221	176	215	197	203	204	204	205	2,684
2017-18	**61**	188	204	197	189	237	212	227	179	235	212	210	201	208	2,759
2018-19	**71**	200	201	210	211	196	256	217	231	192	251	220	207	204	2,867
2019-20	**69**	220	213	206	225	216	211	261	220	246	205	261	216	210	2,982
2020-21	**67**	204	237	220	220	229	232	214	265	237	266	214	258	222	3,085
2021-22	**69**	207	219	244	236	226	249	236	220	288	258	278	212	263	3,204

	Pre-K	K-2	3-5	6-8	9-12	Total
2022-2023	70	657	747	732	1,068	3,273
2023-2024	71	665	770	766	1,122	3,394
2024-2025	72	674	781	798	1,133	3,457
2025-2026	73	684	764	838	1,179	3,539
2026-2027	74	694	775	865	1,163	3,571
2027-2028	75	704	785	877	1,224	3,664
2028-2029	76	713	797	858	1,296	3,740
2029-2030	77	723	808	870	1,319	3,797
2030-2031	78	733	819	881	1,353	3,864
2031-2032	79	743	830	895	1,368	3,915

Prepared: October 2016

School Board Fact Finding

UVA Weldon Cooper Center for Public Service

The University of Virginia's Weldon Cooper Center for Public Service is a research and training organization focused on the Commonwealth of Virginia. The Center provides objective information, data, applied research, technical assistance, and practical training to state and local officials, community leaders, and members of the general public.

The Cooper Center's 60-member staff includes experts in public management, demography, economics and public finance, political science, leadership and organizational development, workforce issues, and survey research.

According to *New Decade, New Estimates*, an article in The Column Newsletter of the Virginia Institute Government, UVA's numbers on county and city population estimates have been shown to be more accurate than the Census Bureau's. Their accuracy is attributed to the estimation methodology of ratio correlation that is tailored to their work in Virginia.

School Board Fact Finding

7. What is the current status of the high school?

a. What is the status of classrooms and learning environments?

b. What is the status of the basic infrastructure, including HVAC, boiler, ceiling/roofing, mold, and more?

c. What is the longevity of these systems?

8. What is the cost of fixing any urgent needs?

a. What are the projected costs for future, non-urgent repairs?

Answers:

- **The status of the high school is outdated and unreliable. A majority of its equipment has exceeded national recommended standards and anticipated replacement dates.**
- **If the data provided here is questionable, it may be prudent for anyone on the joint City Council and School Board body who has not toured the high school to do so.**
- **Or, if touring is not sufficient, a 3rd party expert will be needed to provide additional opinions.**
- **This tab contains supporting documents:**
  - **Memo - Explanation of Major Needs at GM: Facilities Director Seve Padilla outlines the critical infrastructural focal points,**
    - **The chief concerns are HVAC, Roofing, Air Quality, Fire Alarm/Sprinklers, and Elevators.**
    - **This list is not exhaustive or inclusive of the full slate of repairs needed.**
    - **For some issues, like Air Quality, there is already a 3rd party study underway.**
  - **FCCPS Facilities Services CIP Planning – Facilities Equipment End-of-Life and Costs (October 2016): These tables illustrate the official CIP planning costs for high school equipment.**
    - **The column for anticipated replacement year is color-coded; red indicates a date that has passed, whereas green indicates a future anticipated replacement date.**

FCCPS
Facilities Services
Falls Church City Public Schools

MEMO

To: GM/MEH Campus Redevelopment Committee

Date: November 18, 2016

Subject: Explanation of Major needs at GM

As requested, below is the detailed description of Major Current Needs at GM:

1. **HVAC** – Systems are failing at a rapid pace and our staff/contractors are struggling to keep them operational. A full replacement of all systems is necessary or we can expect to experience outages similar to the winter of 2015 when the 1950's boilers failed for over 2 weeks.
2. **Roofing** – The current roof was installed in 1994 and was installed on top of the ca 1970's roof. We continue to experience major leaks when we get heavy rain and snow. The heavy rains we experienced in September 2016, as well as the snow melt from the winter of 2016, overwhelmed us with leaks. FCCPS has patched/replaced several sections over the years and will continue to do so until we can get funding for a new roof.
3. **Air Quality** – The quality of the air at GMHS is a big concern to staff and students. The continued roof leaks and failing HVAC systems are causing higher than normal moisture levels throughout the building. The facilities staff continues to clean/remove any visible mold growth we find, but the cause of the problem must be corrected. The larger concern is what we can't see behind the walls or in the ceiling.
    a. **Air Quality Study** – In addition to recent mold studies that have been conducted in specific areas of GM over the past few years, we have contracted with a professional environmental services company to conduct a full air quality study of GMHS. The study will occur during Thanksgiving Break and the results will be published a few weeks later.
4. **Fire Alarm and Sprinklers** – The age of the fire alarm has proven to be exceptionally problematic over the last few years. The wiring/devices have degraded and are requiring almost non-stop maintenance from our contractor to keep the system operational. Almost weekly we encounter a new issue with the system and must call in contractors for expensive repairs. Additionally, the system continues to send out false alarm signals to our Police/Fire Departments and is causing a major burden to them as they are required to respond every time. Without a full replacement, we are putting ourselves in a position that the system may not function correctly when there is an actual alarm.

FCCPS
Facilities Services
Falls Church City Public Schools

5. **Elevators** – The elevators have been extremely difficult to keep operational. The age of the systems are beyond their life expectancy and they need a full replacement.
    a. **ADA Compliance** – when our elevators fail we are in violation of ADA requirements.
    b. **Dangerous Conditions** – There have been several recent times when someone has been stuck in one of the elevators and we have had to call 911 for assistance.
    c. **Maintenance Costs** – Costs have skyrocketed in recent years for the GM Elevators to keep them operational

While there are many other needs at George Mason High School, the above listed items are the critical infrastructure ones that need attention sooner rather than later. Years of deferred maintenance has caused this problem and we just cannot ignore them any longer. A major renovation or rebuild of George Mason High School is necessary and I urge this group to find a solution.

Regards,

Seve Padilla

Director, Facilities and Security Services

FCCPS Facilities Services
Falls Church City Public Schools

CIP PLANNING - FACILITIES EQUIPMENT END-OF-LIFE AND COSTS

October 2016

HVAC Equipment EOL Analysis - George Mason High School

Anticpated Cost for Full HVAC - $12,000,000.00

Equipment Type	Total # of Equipment	Average Life Expectancy**	Installation Year	Anticipated Replacement Year	Anticipated Replacement Cost
RTU (Roof Top Unit)	7	15	1993	2008	$ 700,000.00
Split Systems (Heat Pumps)	123	15	1993	2008	$ 1,230,000.00
Boilers (Steam)	2	25-30	1993	2019-2024	$ 500,000.00
Boilers (Glycol)	2	25-30	1951	1976-1981	$ 250,000.00
			1971	2001-2006	$ 250,000.00
Hot Water Heaters	2	10-12	15-Jun	2004-2006	$ 40,000.00
			2015	2025-2027	$ 40,000.00
Pumps (Base Mounted)	15	20	1993	2013	$ 45,000.00
Pumps (Pipe Mounted)	3	10	1993	2004	$ 9,000.00
Through Wall Units	30	15	1993	2008	$ 100,000.00

FCCPS
Facilities Services
Falls Church City Public Schools

CIP PLANNING - FACILITIES EQUIPMENT END-OF-LIFE AND COSTS
October 2016

Roofing EOL Analysis - George Mason High School

Anticipated Cost for Full Roof Replacement- $1,200,000.00

Current Roofing*	Approximate Sq Footage	Installation Year	Actual Years In-Service
TPO Membrane Flat Roofing	57,760	1993	23
Galvanized Steel Roofing	45,562	1993	23

Cost for Full Roof Replacement = $1,015,269.00

* An older decaying roof is underneath the current roof

** All of the flashing and joints are in need of replacement

FCCPS Facilities Services
Falls Church City Public Schools

CIP PLANNING - FACILITIES EQUIPMENT END-OF-LIFE AND COSTS

October 2016

Life Safety EOL Analysis - George Mason High School

Item	Description	Installation Year	Average Life Expectancy (yrs)	Anticipated Replacement Year	Anticipated Replacement Cost
Generator	Kohler 100 kWh Diesel	1993	25	2018	$ 110,000.00
Intercom	Dukane	1993	20	2013	$ 60,000.00
Clock Systems	Dukane	1993	20	2013	$ 60,000.00
Access Control	Avigilon Prox Card Access (15 doors)	2007	15	2022	$ 52,500.00
Elevators 1 & 2	2 elevators	1970	30	2000	$ 500,000.00
Elevator 3	1 elevator	1993	30	2023	$ 250,000.00
ADA Chair Lift	Chair Lift	1993	30	2023	$ 200,000.00
Network Security Cameras	41 POE Network Cams	2007	10	2017	$ 20,000.00
Fire Alarm & Sprinkler System	Building Wide Fire Alarm and Sprinkler System	1993	15-20	2009-2014	$ 300,000.00

School Board Fact Finding

9. What renovations (beyond critical equipment) would be needed at the high school over the coming years (such as gymnasium, auditorium, additional class wings, specialized learning environments, etc.)?

a. What is the projected cost of each renovation?

b. How do they contribute to the mission and vision of the school?

Answers:

- **Failure to address capacity needs could require temporary trailers. Based on similar pricing from recent use of trailers at TJ, this is estimated to cost $700,000.00 and is slated for 2018-19 school year.**
- **Renovation and expansion of the existing GMHS footprint costs approximately $88 million, according to a 2015 study from Arcardis.**
- **This tab contains supporting documents:**
  - **Memo – Trailer Costs, from Seve Padilla: a memorandum outlining the costs of trailers at TJ for pricing context.**
  - **FCCPS Capital Projects Planning: The final page of the DRAFT CIP, illustrating potential costs and ranges of expenditures in the next 5 years.**
  - **George Mason – George Marshal Cost Model Comparison: A June 14, 2015, side-by-side display of costs quoted for a George Mason renovation + addition vs. the actual costs for George Marshal High School.**
  - **Memo – Arcadis Conceptual Budget Estimate: a memorandum providing context for how the estimate numbers were achieved.**
  - **George Mason High School Program: Included for any members interested in the detailed square footage of the GMHS programs, square footage and programs being key factors in cost estimates.**

November 10th, 2016

From: Seve Padilla

Attached are the costs TJ Modular classrooms installed in the summer of 2014 (FY14 and FY15 funds) to include: approved site plans, ramp cost proposal, installation costs, utility relocation, and footers costs. I've also included the Arlington County contract we rode.

Total cost breakdown for the project are as follows:

TJ Trailers (Modular Technologies) - $313,212
TJ Trails Concrete Footings (Modular Technologies) - $7,750.00
TJ Trailer Utility Install (Dominion Power)- $4612.82
TJ Trailer Design (HESS) - $42,129.00
TJ Trailer Install (HESS) - $181,778
TJ ADA ramps (TMP Services) - $23,401.00
TJ Access Control (LV CommSec) - $10, 518.55

Total TJ Modular Costs - $583,401.37

CAPITAL PROJECTS PLANNING
FIVE YEARS Possible Projects

YEAR	SCHOOL SITE	PROJECT	COST
2017-2018	Mount Daniel	New Construction	$15,600,000 *includes construction management
2017-2018	Grade Level Solution	Property Acquisition	$4,000,000
2018-2019 *	George Mason	Trailer Installation (6 Rooms)	$700,000
2018-2019	Grade Level Construction	New Construction RFP- Planning and Construction through 2021	$12,000,000
2019-2020 *	George Mason	HVAC Installation	$6,000,000- $12,000,000 *New quote pending
2019-2020 *	George Mason	Roof Installation	$1,015,269 - $5,000,000 *Partial replacement or full replacement
2020-2021	Mary Ellen Henderson	Trailer Installation (6 Rooms)	$750,000 *If new construction has started rentals will be available
2020-2021 *	George Mason	Boiler Replacement Emergency funding	$500,000- $2,000,000 Depending on how many and wall removal required/construction
All Inclusive Lowest Range Estimate $35,165,269 ($19,565,239 without Mount Daniel)			
All Inclusive High Range Estimate $52,050,000 ($36,450,000 without Mount Daniel)			

GEORGE MASON HIGH SCHOOL - GEORGE MARSHAL HIGH SCHOOL
COST MODEL - COMBINED ADDITION / RENOVATION COMPARISON

July 14, 2015

DESCRIPTION	GEORGE MASON HIGH SCHOOL RENOVATION / ADDITION 2015 SQUARE FEET 320000			GEORGE MARSHAL HIGH SCHOOL RENOVATION / ADDITION BID 2011 SQUARE FEET 344000		
SITE IMPROVEMENTS						
Clearing / Earthwork / Sed Cntrl		$200,000			$239,956	
Utilities - Stormwater		$2,000,000			$1,296,877	
Site Concrete		$100,000			$240,600	
Site Improvement Allowance		$1,000,000			$2,042,520	
Subtotal Site Improvements		**$3,300,000**			**$3,819,953**	
HIGH SCHOOOL BUILDING						
DIVISION 1 - General Conditions						
General Conditions	$10.34	$3,309,889		$5.89	$2,027,654	
Contingency	$0.00	$0		$5.29	$1,820,000	
Surveying	$0.45	$145,000		$0.00	$0	
Subtotal Division 1		**$3,454,889**	**$10.80**		**$3,847,654**	**$11.19**
DIVISION 2 - Sitework / Demolition						
Earthwork	$1.17	$375,000		$1.21	$415,228	
Deep Foundations	$0.78	$250,000		$0.00	$0	
Foundation Drainage	$0.02	$5,625		$0.00	$0	
Demolition	$6.31	$2,020,000		$2.83	$972,000	
Subtotal Division 2		**$2,650,625**	**$8.28**		**$1,387,228**	**$4.03**
DIVISION 3 - Concrete						
Cast-in-place Concrete	$6.18	$1,976,250		$2.72	$934,099	
Pre-Cast Concrete	$0.15	$47,916		$0.00	$0	
Subtotal Division 3		**$2,024,166**	**$6.33**		**$934,099**	**$2.72**

DIVISION 4 - Masonry								
Masonry		$12.19	$3,899,500			$7.56	$2,602,247	
Masonry Rebar		$0.31	$100,216			$0.00	$0	
Subtoal Division 4			**$3,999,716**	**$12.50**			**$2,602,247**	**$7.56**
DIVISION 5 - Metals								
Structural Steel		$12.50	$4,000,000			$14.89	$5,121,263	
Downspout Boots		$0.04	$12,000			$0.00	$0	
Expansion Joints		$0.04	$12,569			$0.00	$0	
Subtotal Division 5			**$4,024,569**	**$12.58**			**$5,121,263**	**$14.89**
DIVISION 6 - Wood & Plastics								
Rough Carpentry		$1.27	$406,117			$0.32	$110,072	
Finish Carpentry		$0.78	$250,000			$0.41	$140,800	
Subtotal Division 6			**$656,117**	**$2.05**			**$250,872**	**$0.73**
DIVISION 7 - Thermal & Moisture								
Sheet Waterproofing		$0.05	$16,230			$0.09	$30,700	
Membrane Roofing		$12.70	$4,062,661			$6.59	$2,267,925	
Smoke Vents		$0.09	$30,181			$0.00	$0	
Fireproofing		$0.15	$48,185			$0.00	$0	
Firestopping		$0.08	$25,000			$0.00	$0	
Fire Caulk		$0.28	$90,000			$0.00	$0	
Joint Sealants		$0.21	$66,640			$0.19	$65,000	
Subtotal Division 7			**$4,338,897**	**$13.56**			**$2,363,625**	**$6.87**
DIVISION 8 - Doors & Windows								
Doors / Frames / Hardware		$2.25	$719,199			$2.33	$800,131	
Access Doors		$0.02	$6,000			$0.00	$0	
Overhead Coiling Doors		$0.70	$224,747			$0.21	$71,416	
Windows / Glass / Glazing		$8.37	$2,679,737			$5.00	$1,720,000	
Subtotal Division 8			**$3,629,683**	**$11.34**			**$2,591,547**	**$7.53**

DIVISION 9 - Finishes								
Drywall / Ceilings		$8.28	$2,650,000			$5.01	$1,723,767	
Ceramic Tile		$0.59	$189,880			$2.30	$790,000	
Fluid Applied Athletic Flooring		$0.11	$34,000			$0.16	$54,710	
Wood Gym Flooring		$0.00	$0			$0.23	$79,887	
Wood Stage Flooring		$0.64	$204,000			$0.08	$26,918	
Wood Dance Flooring		$0.23	$72,000			$0.00	$0	
Resilient Tile Flooring		$3.54	$1,133,789			$2.38	$819,163	
Resinous Flooring		$0.15	$47,865			$0.00	$0	
Painting		$1.55	$495,205			$0.79	$272,540	
Subtotal Division 9			**$4,826,739**	**$15.08**			**$3,766,985**	**$10.95**
DIVISION 10 - Specialties								
Visual Display		$0.22	$71,304			$0.50	$171,500	
Toilet Compartments		$0.45	$143,875			$0.20	$67,200	
Louvers and Vents		$0.02	$7,515			$0.01	$3,550	
Signage		$0.20	$64,000			$0.13	$43,917	
Metal Lockers		$0.72	$231,000			$1.44	$495,770	
Fire Protection		$0.01	$4,117			$0.02	$6,900	
Walkway Covers		$0.19	$61,535			$0.00	$0	
Wire Mesh Partitions		$0.01	$3,560			$0.04	$13,813	
Vertical Lift Sectional Partition		$0.76	$242,000			$0.00	$0	
Operable Panel Partitions		$0.06	$18,173			$0.11	$36,386	
Metal Storage Shelving		$0.25	$80,000			$0.29	$99,400	
Toilet Accessories		$0.17	$55,451			$0.13	$45,500	
Subtotal Division 10			**$982,530**	**$3.07**			**$983,936**	**$2.86**
DIVISION 11 - Equpment								
STEAM Equipment		$0.05	$16,000			$0.00	$0	
Studio Design Station		$0.11	$35,171			$0.11	$39,000	
Subtotal Division 11			**$51,171**	**$0.16**			**$39,000**	**$0.11**

DIVISION 12 - Furnishings								
Projection Screens		$0.04	$13,665			$0.00	$0	
Appliances		$0.16	$52,349			$0.01	$2,800	
Plastic Laminate Casework		$4.17	$1,335,879			$2.31	$795,900	
Entrance Mats		$0.06	$19,513			$0.06	$20,064	
Blinds		$0.27	$86,400			$0.25	$85,800	
Library Furnishings		$0.32	$102,000			$0.31	$105,938	
Theater and Blackbox Rigging		$2.60	$832,000			$0.28	$95,969	
Theater AV System		$5.04	$1,614,000			$0.00	$0	
Motorized Pit Lift		$0.49	$155,856			$0.00	$0	
Folding and Portable Stages		$0.09	$28,000			$0.00	$0	
Commercial Laundry		$0.04	$14,000			$0.00	$0	
Dock Bumpers		$0.01	$4,100			$0.00	$0	
Food Service Equipment		$2.60	$832,000			$0.96	$331,500	
Athletic Equipment		$0.42	$134,000			$0.71	$244,925	
Music Casework		$0.19	$62,000			$0.47	$160,200	
Fixed Auditorium Seating		$0.76	$244,000			$0.33	$115,000	
Sound Conditioned Rooms		$0.49	$158,000			$0.00	$0	
Telescoping Bleachers		$3.97	$1,270,000			$0.00	$0	
Subtotal Division 12			**$6,957,762**	**$21.74**			**$1,958,096**	**$5.69**
DIVISION 14 - Conveying								
Elevators		$0.80	$255,075			$0.31	$105,500	
Subtotal Division 14			**$255,075**	**$0.80**			**$105,500**	**$0.31**
Division 15 - Mechanical								
Sprinkler System		$2.30	$736,338			$1.97	$677,500	
Mechanical / Plumbing		$49.14	$15,725,000			$37.39	$12,860,500	
Subtotal Division 15			**$16,461,338**	**$51.44**			**$13,538,000**	**$39.35**
DIVISION 16 - Electrical								
Electrical		$32.50	$10,400,000			$24.79	$8,528,995	
Subtotal Division 16			**$10,400,000**	**$32.50**			**$8,528,995**	**$24.79**
SUBTOTAL HIGH SCHOOL BUILDING			**$64,713,277**	**$202.23**			**$48,019,047**	**$139.59**

MARK-UPS	MARK-UPS	MARK-UPS
SUBTOTAL CONSTRUCTION	**$68,013,277**	**$51,839,000**
General Contractor Mark-up	**$2,448,478**	**$0**
GRAND TOTAL CONSTRUCTION	**$70,461,755**	**$51,839,000**
Architect Design Fee @8%	$5,636,940	$4,147,120
Owner Furniture, Fixtures, & Equipment	$4,000,000	$4,000,000
SUBTOTAL	**$80,098,695**	**$59,986,120**
Contingency @ 5%	$4,004,935	$2,999,306
Escalation to 2016 @ 6%	$4,805,922	
Escalation to 2016 @ 18%		$10,797,502
TOTAL BUDGET COST	**$88,909,552**	**$73,782,928**

ARCADIS
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www.arcadis-us.com

Dr. Toni Jones
Superintendent
Falls Church City Public Schools
800 W. Broad Street, Suite 203
Falls Church, VA 22046

PM/CM

Subject:
George Mason High School
Conceptual Budget Estimate
Renovation / Addition

Date:
June 25, 2015

Contact:
Robert E. Jones

Phone:
410.984.2459

Email:
robert.jones@arcadis-us.com

Our ref:

Dear Dr. Jones and Falls Church City Public School Board:

ARCADIS performed a conceptual budget estimate for the renovation and addition to the George Mason High School (Attached). Since there is currently no design documents associated with the project, ARCADIS utilized a square foot cost model developed from Means Construction Cost Data and recent construction bids for a similar sized High School in the area.

The renovation is based on selective demolition of the existing 200,000 square foot High School building down to the existing structure. This includes the removal of all non-load bearing walls, finishes, roofing, windows, mechanical systems, and electrical systems. The portion of the building to remain includes the structure and exterior masonry walls. The renovation area of the building contains the Kitchen, Gym, Auditorium, and Performing Arts facilities.

The new addition is based on a 120,000 square foot “academic” facility consisting of Classroom spaces. The addition is based on a new structure separate, although connected to the existing building. The location on the site was not determined.

The project would require extensive phasing which increases the construction duration along with the General Conditions cost. It is anticipated that the new addition would be constructed first and used as swing space for the building renovation. During construction, there would be times the facility would operate without certain facilities including the gym and auditorium while these spaces were being renovated. A specific phasing plan and construction duration was not available for the conceptual estimate, but was estimated at four years.

While the required site improvements would not be extensive if the existing parking, landscaping, and site circulation remained “as-is”, there would be some improvements made around the addition and existing building. It is assumed the entire site would be required to meet current Virginia stormwater requirements and improvements would be required to existing utilities serving the facility.

To account for items that cannot be determined without design documents, a contingency of 5% was applied to the new addition, and a contingency of 10% for the renovation. The renovation contingency is higher due to the risk of unforeseen condition inherent in renovation work.

The estimate was prepared by Patrick Walsh with ARCADIS-US. Patrick has a Bachelor’s Degree in Construction Management and 9 years of experience in project controls including estimating and CPM scheduling. Patrick is a leading construction estimator in the Virginia & Maryland area and can draw on resources throughout ARCADIS. ARCADIS employs more than 28,000 people, in 300 offices, in more than 40 countries across the globe.

If you should have any questions, please contact me at 410-984-2459.

Sincerely,

Robert E. Jones

Cc: Project File

GEORGE MASON HIGH SCHOOL RENOVATION 200000 SF ADDITION 120000 SF	RENOVATION	ADDITION	TOTAL COST
SITE IMPROVEMENTS / STORMWATER	$2,250,000	$1,050,000	$3,300,000
BUILDING CONSTRUCTION	$39,690,906	$25,022,367	$64,713,273
SUBTOTAL CONSTRUCTION	$41,940,906	$26,072,367	$68,013,273
GENERAL CONDITIONS @ 3.6%	$1,509,873	$938,605	$2,448,478
CONSTRUCTION PHASING			$4,000,000
TOTAL CONSTRUCTION COST	$43,450,779	$27,010,972	$74,461,751
ARCHITECT FEE @ 8%	$3,476,062	$2,160,878	$5,636,940
OWNER FURNITURE, FIXTURES, & EQUIPMENT	$3,000,000	$1,000,000	$4,000,000
SUBTOTAL	$49,926,841	$30,171,850	$84,098,691
CONTINGENCY / 5% Addition / 10% Renovation	$4,992,684	$1,508,593	$6,501,277
ESCALATION TO 2016 @ 6%	$2,995,610	$1,810,311	$4,805,921
TOTAL BUDGET COST	$57,915,135	$33,490,754	$95,405,889

GEORGE MASON HIGH SCHOOL
COST MODEL - CONCEPTUAL RENOVATION ESTIMATE

June 24, 2015

DESCRIPTION		GEORGE MASON HIGH SCHOOL RENOVATION SQUARE FEET 200000	
SITE IMPROVEMENTS			
Utilities / Stormwater		$1,500,000	
Site Improvement Allowance		$750,000	
Subtotal Site Improvements		**$2,250,000**	
HIGH SCHOOOL BUILDING			
DIVISION 1 - General Conditions			
General Conditions	$10.34	$2,068,681	
Surveying	$0.45	$90,625	
Subtotal Division 1	**$10.80**	**$2,159,306**	**$10.80**
DIVISION 2 - Sitework / Demolition			
Selective Demolition - Shell Remaining	$10.10	$2,020,000	
Subtotal Division 2	**$10.10**	**$2,020,000**	**$10.10**
DIVISION 3 - Concrete			
Concrete Patching - Repairs - Modifications	$3.60	$720,000	
Subtotal Division 3	**$3.60**	**$720,000**	**$3.60**
DIVISION 4 - Masonry			
Masonry - Interior	$5.81	$1,162,000	
Subtoal Division 4	**$5.81**	**$1,162,000**	**$5.81**
DIVISION 5 - Metals			
Structural Steel - Modifications	$5.00	$1,000,000	
Downspout Boots	$0.04	$7,500	
Expansion Joints	$0.04	$7,856	
Subtotal Division 5	**$5.08**	**$1,015,356**	**$5.08**
DIVISION 6 - Wood & Plastics			
Rough Carpentry	$1.27	$253,823	
Finish Carpentry	$0.78	$156,250	
Subtotal Division 6	**$2.05**	**$410,073**	**$2.05**

DIVISION 7 - Thermal & Moisture				
Membrane Roofing	$12.70		$2,539,163	
Smoke Vents	$0.09		$18,863	
Fireproofing	$0.15		$30,116	
Firestopping	$0.08		$15,625	
Fire Caulk	$0.28		$56,250	
Joint Sealants	$0.21		$41,650	
Subtotal Division 7	**$13.51**		**$2,701,666**	**$13.51**
DIVISION 8 - Doors & Windows				
Doors / Frames / Hardware	$2.25		$449,499	
Access Doors	$0.02		$3,750	
Overhead Coiling Doors	$0.70		$140,467	
Windows / Glass / Glazing	$8.37		$1,674,836	
Subtotal Division 8	**$11.34**		**$2,268,552**	**$11.34**
DIVISION 9 - Finishes				
Drywall	$8.28		$1,656,250	
Ceramic Tile	$0.59		$118,675	
Fluid Applied Athletic Flooring	$0.17		$34,000	
Wood Stage Flooring	$1.02		$204,000	
Wood Dance Flooring	$0.36		$72,000	
Resilient Tile Flooring	$3.54		$708,618	
Resinous Flooring	$0.15		$29,916	
Painting	$1.55		$309,503	
Subtotal Division 9	**$15.66**		**$3,132,961**	**$15.66**
DIVISION 10 - Specialties				
Visual Display	$0.22		$44,565	
Toilet Compartments	$0.45		$89,922	
Louvers and Vents	$0.02		$4,697	
Signage	$0.20		$40,000	
Metal Lockers	$0.72		$144,375	
Fire Protection	$0.01		$2,573	
Walkway Covers	$0.19		$38,459	
Wire Mesh Partitions	$0.01		$2,225	
Operable Panel Partitions	$0.06		$11,358	
Vertical Lift Sectional Partition	$1.21		$242,000	
Metal Storage Shelving	$0.25		$50,000	
Toilet Accessories	$0.17		$34,657	
Subtotal Division 10	**$3.52**		**$704,831**	**$3.52**

DIVISION 11 - Equpment - Lab				
STEAM Equipment	$0.08		$16,000	
Studio Design Station	$0.18		$35,171	
Subtotal Division 11	**$0.26**		**$51,171**	**$0.26**
DIVISION 12 - Furnishings				
Library Furnishings	$0.51		$102,000	
Theater and Blackbox Rigging	$4.16		$832,000	
Theater AV System	$8.07		$1,614,000	
Motorized Pit Lift	$0.78		$155,856	
Folding and Portable Stages	$0.14		$28,000	
Commercial Laundry	$0.07		$14,000	
Projection Screens	$0.04		$8,541	
Dock Bumpers	$0.02		$4,000	
Food Service Equipment	$4.16		$832,000	
Appliances	$0.19		$38,000	
Athletic Equipment	$0.67		$134,000	
Music Casework	$0.31		$62,000	
Plastic Laminate Casework	$4.17		$834,924	
Entrance Mats	$0.06		$12,258	
Blinds	$0.27		$54,000	
Fixed Auditorium Seating	$1.22		$244,000	
Sound Conditioned Rooms	$0.79		$158,000	
Telescoping Bleachers	$6.35		$1,270,000	
Subtotal Division 12	**$31.99**		**$6,397,579**	**$31.99**
DIVISION 14 - Conveying				
Elevators	$0.80		$159,075	
Subtotal Division 14	**$0.80**		**$159,075**	**$0.80**
Division 15 - Mechanical				
Sprinkler System	$2.30		$460,211	
Mechanical / Plumbing	$49.14		$9,828,125	
Subtotal Division 15	**$51.44**		**$10,288,336**	**$51.44**
DIVISION 16 - Electrical				
Electrical	$32.50		$6,500,000	
Subtotal Division 16	**$32.50**		**$6,500,000**	**$32.50**
SUBTOTAL HIGH SCHOOL RENOVATION			**$39,690,906**	**$198.45**

MARK-UPS		MARK-UPS
SUBTOTAL CONSTRUCTION		**$41,940,906**
General Contractor Mark-up	**3.6%**	**$1,509,873**
GRAND TOTAL CONSTRUCTION		**$43,450,778**
Architect Design Fee @8%		$3,476,062
Owner Furniture, Fixtures, & Equipment		$3,000,000
SUBTOTAL		**$49,926,840**
Contingency @ 10%		$4,992,684
Escalation to 2016 @ 6%		$2,995,610
TOTAL BUDGET COST		**$57,915,135**

GEORGE MASON HIGH SCHOOL
COST MODEL - CONCEPTUAL ACADEMIC ADDITION ESTIMATE

June 24, 2015

DESCRIPTION		GEORGE MASON HIGH SCHOOL ACADEMIC ADDITION SQUARE FEET 120000	
SITE IMPROVEMENTS			
Clearing / Earthwork / Sed Cntrl		$200,000	
Utilities - Stormwater		$500,000	
Site Concrete		$100,000	
Site Improvement Allowance		$250,000	
Subtotal Site Improvements		**$1,050,000**	
HIGH SCHOOOL BUILDING			
DIVISION 1 - General Conditions			
General Conditions	$10.34	$1,241,208	
Surveying	$0.45	$54,375	
Subtotal Division 1	**$10.80**	**$1,295,583**	**$10.80**
DIVISION 2 - Sitework / Demolition			
Earthwork	$3.13	$375,000	
Deep Foundations	$2.09	$250,000	
Foundation Drainage	$0.05	$5,625	
Subtotal Division 2	**$5.26**	**$630,625**	**$5.26**
DIVISION 3 - Concrete			
Cast-in-place Concrete	$10.47	$1,256,250	
Pre-Cast Concrete	$0.40	$47,916	
Subtotal Division 3	**$10.87**	**$1,304,166**	**$10.87**
DIVISION 4 - Masonry			
Masonry	$22.81	$2,737,500	
Masonry Rebar	$0.84	$100,216	
Subtoal Division 4	**$23.65**	**$2,837,716**	**$23.65**
DIVISION 5 - Metals			
Structural Steel	$25.00	$3,000,000	
Downspout Boots	$0.04	$4,500	
Expansion Joints	$0.04	$4,713	
Subtotal Division 5	**$25.08**	**$3,009,213**	**$25.08**

DIVISION 6 - Wood & Plastics				
Rough Carpentry	$1.27		$152,294	
Finish Carpentry	$0.78		$93,750	
Subtotal Division 6	**$2.05**		**$246,044**	**$2.05**
DIVISION 7 - Thermal & Moisture				
Sheet Waterproofing	$0.14		$16,230	
Membrane Roofing	$12.70		$1,523,498	
Smoke Vents	$0.09		$11,318	
Fireproofing	$0.15		$18,069	
Firestopping	$0.08		$9,375	
Fire Caulk	$0.28		$33,750	
Joint Sealants	$0.21		$24,990	
Subtotal Division 7	**$13.64**		**$1,637,229**	**$13.64**
DIVISION 8 - Doors & Windows				
Doors / Frames / Hardware	$2.25		$269,700	
Access Doors	$0.02		$2,250	
Overhead Coiling Doors	$0.70		$84,280	
Windows / Glass / Glazing	$8.37		$1,004,901	
Subtotal Division 8	**$11.34**		**$1,361,131**	**$11.34**
DIVISION 9 - Finishes				
Drywall	$8.28		$993,750	
Ceramic Tile	$0.59		$71,205	
Resilient Tile Flooring	$3.54		$425,171	
Resinous Flooring	$0.15		$17,949	
Painting	$1.55		$185,702	
Subtotal Division 9	**$14.11**		**$1,693,777**	**$14.11**
DIVISION 10 - Specialties				
Visual Display	$0.22		$26,739	
Toilet Compartments	$0.45		$53,953	
Louvers and Vents	$0.02		$2,818	
Signage	$0.20		$24,000	
Metal Lockers	$0.72		$86,625	
Fire Protection	$0.01		$1,544	
Walkway Covers	$0.19		$23,076	
Wire Mesh Partitions	$0.01		$1,335	
Operable Panel Partitions	$0.06		$6,815	
Metal Storage Shelving	$0.25		$30,000	
Toilet Accessories	$0.17		$20,794	
Subtotal Division 10	**$2.31**		**$277,699**	**$2.31**
DIVISION 11 - Equpment				
Subtotal Division 11	**$0.00**		**$0**	**$0.00**

DIVISION 12 - Furnishings			
Projection Screens	$0.04	$5,124	
Appliances	$0.12	$14,349	
Plastic Laminate Casework	$4.17	$500,955	
Entrance Mats	$0.06	$7,355	
Blinds	$0.27	$32,400	
Subtotal Division 12	**$4.67**	**$560,183**	**$4.67**
DIVISION 14 - Conveying			
Elevators	$0.80	$96,000	
Subtotal Division 14	**$0.50**	**$96,000**	**$0.80**
Division 15 - Mechanical			
Sprinkler System	$2.30	$276,127	
Mechanical / Plumbing	$49.14	$5,896,875	
Subtotal Division 15	**$51.44**	**$6,173,002**	**$51.44**
DIVISION 16 - Electrical			
Electrical	$32.50	$3,900,000	
Subtotal Division 16	**$32.50**	**$3,900,000**	**$32.50**
SUBTOTAL HIGH SCHOOL BUILDING		**$25,022,367**	**$208.52**

MARK-UPS	**MARK-UPS**

SUBTOTAL CONSTRUCTION		**$26,072,367**
General Contractor Mark-up	**3.6%**	**$938,605**
GRAND TOTAL CONSTRUCTION		**$27,010,972**
Architect Design Fee @8%		$2,160,878
Owner Furniture, Fixtures, & Equipment		$1,000,000
SUBTOTAL		**$30,171,850**
Contingency @ 5%		$1,508,593
Escalation to 2016 @ 6%		$1,810,311
TOTAL BUDGET COST		**$33,490,754**

GEORGE MASON HIGH SCHOOL PROGRAM

STAKEHOLDER MEETING DRAFT REVISIONS

April 9, 2016

DEPARTMENT	PROGRAM SPACE	ROOM SQUARE FEET	NUMBER	TOTAL SQUARE FEET	REVISED SQUARE FEET	REVISED NUMBER	TOTAL SQUARE FEET	REVISED SQUARE FEET	REVISED NUMBER	TOTAL SQUARE FEET
					STAKEHOLDERS			REDUCED ACADEMIC SPACE		
ENGLISH DEPARTMENT										
	English Collaborative Classrooms	800	15	12000	800	15	12000	800	11	8800
	Content Area Small Classroom	400	3	1200	400	3	1200	400	2	800
	English Breakout Space	400	2	800	200	4	800	200	4	800
	Teacher Team Room & Lounge	400	1	400	400	1	400	400	1	400
	Academic Storage Room	300	1	300	300	1	300	300	1	300
	Staff Toilet	60	1	60	60	1	60	60	1	60
	SUBTOTAL ENGLISH			14760			14760			11160
MATH DEPARTMENT										
	Math Classrooms	800	15	12000	800	15	12000	800	11	8800
	Content Area Small Classroom	400	5	2000	400	5	2000	400	4	1600
	Teacher Team Room & Lounge	400	1	400	400	1	400	400	1	400
	Academic Storage Room	300	1	300	300	1	300	300	1	300
	Staff Toilet	60	1	60	60	1	60	60	1	60
	SUBTOTAL MATH			14760			14760			11160
SCIENCE DEPARTMENT										
	Universal Lab / Classroom	1800	13	23400	1600	13	20800	1600	9	14400
	Science Preperation Room	0	0	0	400	6	2400	400	4	1600
	STEAM Lab / Resource Area	1500	1	1500	1500	1	1500	1500	1	1500
	Content Area Small Classroom	400	2	800	400	2	800	400	2	800
	Science Breakout Space	400	2	800	200	4	800	200	2	400
	Teacher Team Room & Lounge	400	1	400	400	1	400	400	1	400
	Chemical Storage Room	0	0	0	100	1	100	100	1	100
	Academic Storage Room	300	1	300	300	1	300	300	1	300
	Staff Toilet	60	1	60	60	1	60	60	1	60
	SUBTOTAL SCIENCE			27260			27160			19560
SOCIAL STUDIES DEPARTMENT										
	Social Studies Collaborative Classroom	800	15	12000	800	15	12000	800	11	8800
	Content Area Small Classroom	400	4	1600	400	4	1600	400	3	1200
	Social Studies Breakout Space	400	2	800	200	4	800	200	3	600
	Teacher Team Room & Lounge	400	1	400	400	1	400	400	1	400
	Academic Storage Room	300	1	300	300	1	300	300	1	300
	Staff Toilet	60	1	60	60	1	60	60	1	60
	SUBTOTAL SOCIAL STUDIES			15160			15160			11360

GEORGE MASON HIGH SCHOOL PROGRAM

STAKEHOLDER MEETING DRAFT REVISIONS

April 9, 2016

DEPARTMENT	PROGRAM SPACE	ROOM SQUARE FEET	NUMBER	TOTAL SQUARE FEET	REVISED SQUARE FEET	REVISED NUMBER	TOTAL SQUARE FEET	REVISED SQUARE FEET	REVISED NUMBER	TOTAL SQUARE FEET
WORLD LANGUAGE DEPARTMENT										
	Large Group Classroom	800	11	8800	800	11	8800	800	9	7200
	Content Area Small Classroom	400	3	1200	400	3	1200	400	2	800
	Small Group Classroom	400	1	400	400	1	400	400	1	400
	Language Breakout Space	200	5	1000	200	5	1000	200	4	800
	Teacher Team Room & Lounge	400	1	400	400	1	400	400	1	400
	Academic Storage Room	300	1	300	300	1	300	300	1	300
	Staff Toilet	60	1	60	60	1	60	60	1	60
	SUBTOTAL WORLD LANGUAGE			12160			12160			9960
INTER-DISCIPLINARY										
	LIBRARY / MEDIA SERVICES									
	Media Center	4000	1	4000	4000	1	4000	4000	1	4000
	Office	150	3	450	150	3	450	150	3	450
	Workroom	400	1	400	400	1	400	400	1	400
	Staff Toilet	60	1	60	60	1	60	60	1	60
	Collaborative Classroom	800	1	800	800	1	800	800	1	800
	Collaborative Classroom	500	2	1000	500	2	1000	500	2	1000
	Design Lab	1600	1	1600	1600	1	1600	1600	1	1600
	Design Studio	900	1	900	900	1	900	900	1	900
	Small Group / Conference	300	2	600	300	2	600	300	2	600
	Digital Technology Storage	500	1	500	500	1	500	500	1	500
	SUBTOTAL LIBRARY / MEDIA			10310	SUBTOTAL LIBRARY / MEDIA		10310	SUBTOTAL LIBRARY / MEDIA		10310
	INTER-DISCIPLINARY RESOURCES									
	Presentation Arena	1000	1	1000	1000	1	1000	1000	1	1000
	Small Group / Ind Assessment	200	3	600	200	3	600	200	3	600
	Hybrid Learning Center	1500	1	1500	1500	1	1500	1500	1	1500
	SUBTOTAL INTER-DISCIPLINARY			3100	SUBTOTAL INTER-DISCIPLINARY		3100	SUBTOTAL INTER-DISCIPLINARY		3100
	SUBTOTAL INTER-DISCIPLINARY			13410			13410			13410

GEORGE MASON HIGH SCHOOL PROGRAM

STAKEHOLDER MEETING DRAFT REVISIONS

April 9, 2016

DEPARTMENT	PROGRAM SPACE	ROOM SQUARE FEET	NUMBER	TOTAL SQUARE FEET	REVISED SQUARE FEET	REVISED NUMBER	TOTAL SQUARE FEET	REVISED SQUARE FEET	REVISED NUMBER	TOTAL SQUARE FEET
ART - PERFORMANCE AND DESIGN DEPARTMENT										
	VISUAL ARTS									
	Design Labs	1200	4	4800	1200	4	4800	1100	4	4400
	Darkroom	0	0	0	400	1	400	400	1	400
	Teacher Team Room & Lounge	800	1	800	400	2	800	400	2	800
	Art Storage	300	3	900	450	2	900	450	2	900
	Kiln Room	200	1	200	200	1	200	200	1	200
		SUBTOTAL VISUAL ARTS		6700	SUBTOTAL VISUAL ARTS		7100	SUBTOTAL VISUAL ARTS		6700
	AUDITORIUM / PERFORMANCE									
	Main Auditorium / Stage	12000	1	12000	6000	1	6000	6000	1	6000
	Auditorium Lobby	1000	1	1000	1000	1	1000	1000	1	1000
	Stage and Support Areas	4000	1	4000	4000	1	4000	4000	1	4000
	Control Room	200	1	200	200	1	200	200	1	200
	Broadcast Room	300	1	300	300	1	300	300	1	300
	Ticket Booth	50	1	50	50	1	50	50	1	50
	Concessions / School Store	300	1	300	300	1	300	300	1	300
	Dressing Room / Toilet	300	2	600	300	2	600	300	2	600
	Scene Shop & Workroom	700	1	700	800	1	800	700	1	700
	Costume Shop & Storage	0	0	0	800	1	800	700	1	700
	Theatre Arts / Drama / Black Box	1800	1	1800	1800	1	1800	1800	1	1800
	Orchestra Pit	1500	1	1500	1500	1	1500	1500	0	0
	Public Toilets	700	2	1400	700	2	1400	500	2	1000
		SUBTOTAL AUDITORIUM / PERFORM/		23850	SUBTOTAL AUDITORIUM / PERFORM/		18750	SUBTOTAL AUDITORIUM / PERFORM/		16650
	PERFORMING ARTS									
	Band / Orchestra	1600	1	1600	2000	1	2000	1600	1	1600
	Choral / Strings Program	1000	1	1000	1000	1	1000	1000	1	1000
	Instrument Storage - Percussion	200	2	400	400	1	400	400	1	400
	Instrument Storage - Strings	0	0	0	200	1	200	200	1	200
	Instrument Storage - Band	0	0	0	200	1	200	200	1	200
	Uniform Storage	200	2	400	200	2	400	200	2	400
	Practice Rooms	100	6	600	100	2	200	100	2	200
	Sectional Practice Rooms	0	0	0	600	2	1200	600	2	1200
	Music Library	150	2	300	300	1	300	300	1	300
		SUBTOTAL PERFORMING ARTS		4300	SUBTOTAL PERFORMING ARTS		5900	SUBTOTAL PERFORMING ARTS		5500
	SUBTOTAL ART - PERFORMANCE AND DESIGN			34850			31750			28850
CROSS DISCIPLINARY INNOVATION DEPARTMENT										
	Project Based Learning Lab	1500	2	3000	1500	2	3000	1500	2	3000
	Education Resource Center	800	1	800	800	1	800	800	1	800
	Technology Breakout Space	200	2	400	200	2	400	200	2	400
	Storage Room	150	2	300	300	1	300	300	1	300
	Staff Toilet	60	1	60	60	1	60	60	1	60
	SUBTOTAL CROSS DISCIPLINARY INNOVATION			4560			4560			4560

GEORGE MASON HIGH SCHOOL PROGRAM

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April 9, 2016

DEPARTMENT	PROGRAM SPACE	ROOM SQUARE FEET	NUMBER	TOTAL SQUARE FEET	REVISED SQUARE FEET	REVISED NUMBER	TOTAL SQUARE FEET	REVISED SQUARE FEET	REVISED NUMBER	TOTAL SQUARE FEET
PHYSICAL EDUCATION										
	GYMNASIUM									
	Competition Gym	20000	1	20000	20000	1	20000	20000	1	20000
	Gym Lobby	1000	1	1000	1000	1	1000	1000	1	1000
	Community Gymnasium - 2 Courts	12000	1	12000	12000	1	12000	12000	1	12000
	Wrestling Room	3000	1	3000	3000	1	3000	3000	1	3000
	Fitness Center	4000	1	4000	4000	1	4000	4000	1	4000
	Concessions	300	1	300	300	1	300	300	1	300
	Ticket Booth	150	1	150	150	1	150	150	1	150
	Broadcast AV Room	300	1	300	300	1	300	300	1	300
	Indoor Storage	800	1	800	800	1	800	800	1	800
	Boys Locker Room	6000	1	6000	6000	1	6000	6000	1	6000
	Girls Locker Room	6000	1	6000	6000	1	6000	6000	1	6000
	Public Toilet Rooms	700	2	1400	700	2	1400	500	2	1000
	Outdoor Storage	250	1	250	250	1	250	250	1	250
		SUBTOTAL GYMNASIUM		55200	SUBTOTAL GYMNASIUM		55200	SUBTOTAL GYMNASIUM		54800
	GYM OFFICES									
	Gym A.D. Office	500	1	500	500	1	500	500	1	500
	Conference Room	900	1	900	900	1	900	900	1	900
	Faculty Offices	150	7	1050	150	7	1050	150	7	1050
	Coaches Offices	1500	2	3000	1500	2	3000	1500	2	3000
	Staff Toilet / Shower Room	0	0	0	100	2	200	100	2	200
	Health CR	800	3	2400	800	3	2400	800	3	2400
		SUBTOTAL GYM OFFICES		7850	SUBTOTAL GYM OFFICES		8050	SUBTOTAL GYM OFFICES		8050
	GYM SUPPORT SPACES									
	Laundry Room	500	1	500	500	1	500	500	1	500
	Training Room	1500	1	1500	1500	1	1500	1500	1	1500
	Storage / PE	800	1	800	800	1	800	800	1	800
	Storage / Athletics	4500	1	4500	4500	1	4500	4500	1	4500
		SUBTOTAL GYM SUPPORT SPACES		7300	SUBTOTAL GYM SUPPORT SPACES		7300	SUBTOTAL GYM SUPPORT SPACES		7300
	SUBTOTAL PHYSICAL EDUCATION			70350			70550			70150
SPECIAL EDUCATION										
	Special Needs Content Area	800	1	800	800	1	800	800	1	800
	Small Resource Room	500	2	1000	500	2	1000	500	2	1000
	Sensory Room	500	1	500	500	1	500	500	1	500
	Life Skills	1500	1	1500	1500	1	1500	1500	1	1500
	Speech/OT/PT Lab	800	1	800	800	1	800	800	1	800
	Transition Center	1200	1	1200	1200	1	1200	1200	1	1200
	Storage Room	200	1	200	200	1	200	200	1	200
	Conference Room	250	1	250	250	1	250	250	1	250
	Testing Room	100	1	100	100	1	100	100	1	100
	Toilet Changing Room	0	0	0	80	1	80	80	1	80
	Staff Toilet	60	1	60	60	1	60	60	1	60
	SUBTOTAL SPECIAL EDUCATION			6410			6490			6490

GEORGE MASON HIGH SCHOOL PROGRAM

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April 9, 2016

DEPARTMENT	PROGRAM SPACE	ROOM SQUARE FEET	NUMBER	TOTAL SQUARE FEET	REVISED SQUARE FEET	REVISED NUMBER	TOTAL SQUARE FEET	REVISED SQUARE FEET	REVISED NUMBER	TOTAL SQUARE FEET
TECHNOLOGY SUPPORT SERVICES										
	IT Admin Office / Command Center	1000	1	1000	1000	1	1000	1000	1	1000
	Digital Technology Storage	200	1	200	200	1	200	200	1	200
	Server Room	300	1	300	300	1	300	300	1	300
	SUBTOTAL TECHNOLOGY SUPPORT SERVICES			1500			1500			1500
BUILDING SERVICES / MAINTENANCE										
	Custodial / Maint Office / Shop	120	3	360	800	1	800	800	1	800
	Receiving / Storage	1200	1	1200	1200	1	1200	1200	1	1200
	Staff Toilet	0	0	0	60	1	60	60	1	60
	Outdoor Storage Facility	0	0	0	2000	1	2000	2000	1	2000
	Lockers	200	1	200	0	0	0	0	0	0
	SUBTOTAL BUILDING SERVICES			1760			4060			4060
HEALTH SERVICES										
	Clinic Waiting / Reception	50	1	50	50	1	50	50	1	50
	Nurse's Office	100	2	200	100	2	200	100	2	200
	Exam Room	150	1	150	150	1	150	150	1	150
	Resting Area	100	2	200	100	2	200	100	2	200
	Storage	50	1	50	50	1	50	50	1	50
	Health Toilet	75	2	150	75	2	150	75	2	150
	SUBTOTAL HEALTH SERVICES			800			800			800
FOOD SERVICE										
	Dining / Commons	7000	1	7000	7000	1	7000	7000	1	7000
	Serving	1600	1	1600	1600	1	1600	1600	1	1600
	Kitchen	1500	1	1500	1500	1	1500	1500	1	1500
	Kitchen Office	50	1	50	50	2	100	50	2	100
	Walk-in Refrigerator	500	1	500	500	1	500	500	1	500
	Walk-in Freezer	500	1	500	500	1	500	500	1	500
	Dry Storage	600	1	600	600	1	600	600	1	600
	Faculty Dining / Lounge	300	1	300	300	1	300	300	1	300
	Kitchen Staff Breakroom	0	0	0	150	1	150	150	1	150
	Catering Storage Room	0	0	0	300	1	300	300	1	300
	Senior Courtyard - Outside Space	0	1	0	0	1	0	0	1	0
	Staff Toilet	60	1	60	60	1	60	60	1	60
	SUBTOTAL FOOD SERVICE			12110			12610			12610

GEORGE MASON HIGH SCHOOL PROGRAM

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DEPARTMENT	PROGRAM SPACE	ROOM SQUARE FEET	NUMBER	TOTAL SQUARE FEET	REVISED SQUARE FEET	REVISED NUMBER	TOTAL SQUARE FEET	REVISED SQUARE FEET	REVISED NUMBER	TOTAL SQUARE FEET
ADMINISTRATION / SAFETY / GUIDANCE										
	ADMINISTRATION									
	Secure Vestibule	300	1	300	300	1	300	300	1	300
	Entrance Lobby	800	1	800	800	1	800	800	1	800
	Reception / Clerical	500	1	500	500	1	500	500	1	500
	Delivery Storage Room	0	0	0	50	1	50	50	1	50
	Principal	300	1	300	300	1	300	300	1	300
	Assistant Principal / Dean	120	3	360	120	3	360	120	3	360
	Staff Offices	120	3	360	120	3	360	120	3	360
	Workroom / Mail	300	1	300	300	1	300	300	1	300
	Conference Room	400	1	400	400	1	400	400	1	400
	Storage / Supplies	100	4	400	100	4	400	100	4	400
	Attendance	150	1	150	150	1	150	150	1	150
	Bookkeeper	150	1	150	150	1	150	150	1	150
	School Resource Officer	0	0	0	120	1	120	120	1	120
	Parent/Teacher Liaison	0	0	0	120	1	120	120	1	120
	Records Storage	200	1	200	200	1	200	200	1	200
	Student Supervised Study	200	1	200	200	1	200	200	1	200
	Staff Toilet	60	2	120	60	2	120	60	2	120
		SUBTOTAL ADMINISTRATION		4540	SUBTOTAL ADMINISTRATION		4830	SUBTOTAL ADMINISTRATION		4830
	GUIDANCE / CAREER CENTER / STUDENT & FAMILY SUPPORT									
	Guidance Reception	100	1	100	100	1	100	100	1	100
	Registrar / Secretary	75	1	75	75	1	75	75	1	75
	College / Career Center	300	1	300	300	1	300	300	1	300
	Main Counselor's Office	175	1	175	175	1	175	175	1	175
	Counselor's Office	150	4	600	150	4	600	150	4	600
	IB Coordinator / Gifted	150	1	150	150	1	150	150	1	150
	Testing / Data Coordinator	150	1	150	150	1	150	150	1	150
	Student Support	150	2	300	150	2	300	150	2	300
	Itinerants	50	3	150	50	3	150	50	3	150
	Small Group / Conference	200	1	200	200	1	200	200	1	200
	Workroom	200	1	200	200	1	200	200	1	200
	Records Storage	200	1	200	800	1	800	800	1	800
	Special Education / Parent Liaison	200	1	200	200	1	200	200	1	200
	Staff Toilet	60	2	120	60	2	120	60	2	120
		SUBTOTAL GUIDANCE		2920	SUBTOTAL GUIDANCE		3520	SUBTOTAL GUIDANCE		3520
	SUBTOTAL ADMINISTRATION / SAFETY / GUIDANCE			7460			8350			8350
TOILETS										
	Staff Toilets	60	15	Included	60	15	Included	60	15	Included
	Health Toilet	75	2	Included	75	2	Included	75	2	Included
	Dressing Room / Toilet	300	2	Included	300	2	Included	300	2	Included
	Boys / Girls Locker	6000	2	Included	6000	2	Included	6000	2	Included
	Public Toilets	700	4	Included	700	4	Included	700	4	Included
	Student Unisex Single Toilets	0	0	0	60	4	240	60	4	240
	Boys Gang Toilets	300	4	1200	300	4	1200	300	4	1200
	Girls Gang Toilets	300	4	1200	300	4	1200	300	4	1200
	Custodial Closets	50	9	450	50	9	450	50	9	450
	SUBTOTAL TOILETS			2850			3090			3090

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DEPARTMENT	PROGRAM SPACE	ROOM SQUARE FEET	NUMBER	TOTAL SQUARE FEET	REVISED SQUARE FEET	REVISED NUMBER	TOTAL SQUARE FEET	REVISED SQUARE FEET	REVISED NUMBER	TOTAL SQUARE FEET
TOTAL PROGRAM SPACE				240160			241170			217070
SUPPORT SPACES AND CIRCULATION										
	Mechanical Room									
	Electrical Room									
	Electrical Closets									
	Communication Closets									
	Sprinkler Room									
	Elevators									
	Stairs									
	Corridors									
	Non-Programed Space 40%	Innovative Design		96064			96468			86828
	SUBTOTAL SUPPORT SPACES AND CIRCULATION			96064			96468			86828
GRAND TOTAL				336224			337638			303898

School Board Fact Finding

10. What could the school system accomplish at certain funding tiers? What can the school system buy with $40, $60, $80, $100, or $120 million?

- **a. Can we break down desired features into groupings of amenities and options to display opportunity costs and trade-offs?**
- **b. Which needs are critical or essential?**
- **c. Which needs are truly additive or supplementary?**

Answers:

- **The working group, along with staff and consultants, has divided initial tiers based on scope of effort. They are:**
  - **Defer Construction**
  - **Renovation + New Construction**
  - **New Construction**
- **These tiers cover 5 options ranging from "Fix only critical issues and use trailers for capacity needs" up to "Build a brand new school." Some of the options have subsets (A and B) with slightly different nuances.**
- **The breakdowns include certain options – like additions to MEHMS and central office space – that have been mentioned in discussions but may not be "critical."**
- **Additive needs, such as swimming pools and soccer fields, have been included not by cost but by availability/possibility.**
- **This tab contains supporting documents:**
  - **Renovation Workbook – a table breaking down the details of each tier and option**
  - **Option 1 Defer Construction cost breakdown**
  - **Option 2 Phased Construction cost breakdown**
  - **Option 3-5 High School Options cost breakdowns**

	DEFER CONSTRUCTION	RENOVATION and NEW CONSTRUCTION						NEW CONSTRUCTION		
Old Label	Option 2	*(None)*	Option 3	Option 4	Option 5	Option 4A	Option 6	Option 7	Option 8	Option 8a
DESCRIPTION	**Option 1** **Fix Critical Issues + Trailers**	**Option 2** **Phased Additions**	**Option 3** **Minimal Renovation + Addition**	**Option 3A** **Renovation + Addition**	**Option 3B** **Gut Renovation + Addition**	**Option 4** **Half Demolition - Renovation**	**Option 4a** **Half Demolition - Gut Renovation**	**Option 5** **New School**	**Option 5A** **New School - Future Addition**	**Option 5B** **New School - With Shell for Expansion**
Estimated Budget	**$19.8 M** **Plus Escalation Costs for Eventual Future Construction**	**$ 111 M over 12 Years** **$43 M 2021 / $10M 2025 / $58 M 2029**	**$ 65 M**	**$ 78 M**	**$ 103 M**	**$ 105 M**	**$ 114 M**	**$ 117 M**	**$107 M**	**$113 M**
MEHMS Addition	No	Yes - 19,700 SF	Yes - 16,700 SF	Yes - 16,700 SF	Yes - 16,700 SF	Yes - 19,700 SF	Yes - 16,700 SF	Yes - 19,700 SF	Yes - 19,700 SF	Yes - 19700 SF
Maximum Capacity										
GMHS Max Capacity		1200	1500	1500	1500	1500	1500	1500	1200	1200
MEHMS Max Capacity		972	972	972	972	972	972	972	972	972
Year at Capacity	year to year	2029	Past 2030	Past 2030	Past 2030	Past 2030	Past 2030	Past 2030	2029	2029
Renovation	0 SF	Critical Repairs	200,000 SF	200,000 SF	200,000 SF	100,000 SF	100,000 SF	0 SF	0 SF	0 SF
Addition	0 SF	200,000 SF	103,898 SF	103,898 SF	103,898 SF	203,898 SF	203,898 SF	303,898 SF	268,860 SF	268,860 SF
										Shell Construction 33,038 SF
Central Office Space	No	Yes - 2029: 11,800 SF $3M	Yes - 11,800 SF - $3 M	Yes - 11,800 SF - $3 M	Yes - 11,800 SF - $3 M	Yes - 11,800 SF - $3 M	Yes - 11,800 SF - $3 M	Yes - 11800 SF - $3 M	Yes - 11800 SF - $3 M	Yes - 11800 SF - $3 M
DEVELOPMENT	No	Possibly	No	No	No	Yes	Yes	Yes	Yes	Yes
Acreage Available	0	Possibly 4-6 Acres	0	0	0	Possibly 4-6 Acres	Possibly 4 - 6 Acres	Possibly 6 to 10 acres	Possibly 6 to 10 acres	Possibly 6 to 10 acres
When Available	N/a	After 2029	n/a	n/a	n/a	Available 2022	Available 2023	Available 2021	Available 2022	Available 2023
Land Value*		$15 - 25 M	0	0	0	$ 15 - 25 M	15-25 M	35 - 45 M	35- 45 M	35 - 45 M
Net Annual Fiscal Impact*		$800k - 1.2 M	0	0	0	$ 800k - 1.2 M	800k - 1.2 M	1.4 M - 1.8 M	1.4 M - 1.8 M	1.4 M - 1.8 M
Finance Reduction**	0	$23 M - 37M	0	0	0	$ 23M - 37M	23M - 37 M	49M - 63M	49M - 63M	49-63M
Net Cost, at build out*	$19.8 M	$88 M - 74 M	$ 65 M	$ 78 M	$ 103 M	$82 M - 70 M	$91 M - 77 M	$68 M - 54M	$58 M - 44 M	$63M - 47M
OTHER CONSIDERATIONS										
LEED Standard	No	Yes on New Building	No	No	No	Yes	Silver	Silver	Silver	Silver
Parking	No Change	New Parking	Minimal Change	Minimal Change	Minimal Change	New Parking	New Parking	New Parking	New Parking	New Parking
New Soccer Field		Possibly after 2029	No	No	No	Possibly	Possibly	New Soccer Field	New Soccer Field	New Soccer Field
Pool		Possible beyond 2029	No	No	No	No	No	No	No	No
Risk	Cost Escalation Risk	Feasibility not yet known	Opportunity Cost	Opportunity Cost	Opportunity Cost	Feasibility & Market Risk	Feasibility & Market Risk	Market Risk	Market Risk	Market Risk
Completion Date		**12 Years (2029)**	**5 Years (2022)**	**5 Years (2022)**	**6 Years (2023)**	**5 Years (2022)**	**6 Years (2023)**	**4 Years (2021)**	**4 Years (2021)**	**4 Years (2021)**
Timeline	2020 6 Trailers	2017 Referendum	2017 Referendum	2017 Referendum	2017 Referendum	2017 Referendum	2017 Referendum	2017 Referendum	2017 Referendum	2017 Referendum
	2022 6 Trailers	2017 Select Architect	2017 Select Architect	2017 Select Architect	2017 Select Architect	2017 Select Architect	2017 Select Architect	2017 Procurement	2017 Procurement	2017 Procurement
	2024 6 Trailers	2021 80,000 SF Addition	2020 New Addition	2019 Replace HVAC / Roof	2020 New Addition	2020 New Addition	2021 New Addition	2021 New High School	2021 New High School	2021 New High School
	2024 6 Trailers	2025 MEHMS Expansion	2021 Renovation Phase 1	2020 New Addition	2021 Renovation Phase 1	2021 Renovation Phase 1	2022 Renovation Phase 1	2021 Demolition Old H.S.	2021 Demolition Old H.S.	2021 Demolition Old H.S.
	2027 6 Trailers	2029 120,000 SF Addition	2021 Renovation Pase 2	2021 Renovation Phase 1	2022 Renovation Phase 2	2021 Renovation Phase 2	2023 Renovation Phase 2			
	2029 6 Trailers		2022 Renovation Phase 3	2021 Renovation Phase 2	2023 Renovation Phase 3	2022 Renovation Phase 3	2023 Demolition			
			2022 Renovation Phase 4	2022 Renovation Phase 3	2024 Renovation Phase 4	2022 Renovation Phase 4				
				2022 Renovation Phase 4		2022 Demolition				
			MEHMS Expansion anytime 2019-22	MEHMS Expansion anytime 2019-22	MEHMS Expansion anytime 2019-24	MEHMS Expansion anytime 2019-24	MEHMS Expansion anytime 2019-23	MEHMS Expansion anytime 2019-21	MEHMS Expansion anytime 2019-21	MEHMS Expansion anytime 2019-21

OPTION NO. 1 - DEFER CONSTRUCTION (TRAILERS) - 15 YEARS - 2017 to 2032

George Mason HS Maintenance	
GM New Roof	$1,000,000
GM Replace HVAC Equipment	$7,000,000
GM General Repairs $500K / Year	$7,500,000
Subtotal GM Costs	**$15,500,000**

Install New Classroom Trailers	
2020 - Add 6 Classroom Trailers	$750,000
2022 - Add 6 Classroom Trailers	$795,000
2024 - Add 6 Classroom Trailers	$842,700
2027 - Add 6 Classroom Trailers	$918,543
2029 - Add 6 Classroom Trailers	$973,656
Subtotal Trailer Construction	**$4,279,899**

High School Escalation @3% / Year	
2017 Escalation on $117M	$3,510,000
2018 Escalation on $117M	$3,510,000
2019 Escalation on $117M	$3,510,000
2020 Escalation on $117M	$3,510,000
2021 Escalation on $117M	$3,510,000
Subtotal Escalation 5 Years	**$17,550,000**
2022 Escalation on $117M	$3,510,000
2023 Escalation on $117M	$3,510,000
2024 Escalation on $117M	$3,510,000
2025 Escalation on $117M	$3,510,000
2026 Escalation on $117M	$3,510,000
Subtotal Escalation 10 Years	**$35,100,000**
2027 Escalation on $117M	$3,510,000
2028 Escalation on $117M	$3,510,000
2029 Escalation on $117M	$3,510,000
2030 Escalation on $117M	$3,510,000
2031 Escalation on $117M	$3,510,000
Total Escalation 15 Years	**$52,650,000**

OPTION NO. 2 - PHASED ADDITIONS 2-Jan-17	HIGH SCHOOL ADD MEH LOT COMPLETE 2021	MEH EXPANSION COMPLETE 2025	HIGH SCHOOL ADD DEMO 1/2 EXISTING COMPLETE 2029
RENOVATION SF	0	0	0
NEW CONSTRUCTION SF	80000	0	120000
TOTAL HIGH SCHOOL SF	**80000**	**0**	**120000**
SITE IMPROVEMENTS	$2,190,000	$975,000	$5,167,500
RENOVATION	$0	$0	$0
NEW CONSTRUCTION	$16,509,600	$0	$27,226,800
GENERAL CONTRACTOR MARK-UP	$673,186	$35,100	$1,166,195
SUBTOTAL CONSTRUCTION COSTS	**$19,372,786**	**$1,010,100**	**$33,560,495**
Architect Design Fee @8%	$7,000,000	$80,808	$250,000
Phasing Costs - Additional General Conditions	$0	$0	$0
Existing High School - Maintenance Costs	$8,000,000	$2,000,000	$2,000,000
Temporary Classroom Trailers	$0	$0	$0
Construction Management Fee	$1,500,000	$600,000	$1,500,000
Owner Furniture, Fixtures, & Equipment	$2,000,000	$400,000	$2,000,000
Contingencty @ 5%	$1,893,639	$204,545	$1,965,525
Escalation	$2,272,367	$736,363	$11,793,148
TOTAL HIGH SCHOOL BUDGET COST	**$42,038,792**	**$5,031,817**	**$53,069,168**
PROJECT HIGH SCHOOL COST PER SF	**$525.48**		**$442.24**
MARY ELLEN HENDERSON SF	3000	16700	0
CENTRAL OFFICE SF	0	0	11800
TOTAL ADDITIONAL SF	**3000**	**16700**	**11800**
ATHLETIC FIELDS	$0	$0	$1,812,586
MARY ELLEN HENDERSON	$745,174	$5,069,801	$0
CENTRAL OFFICE	$0	$0	$3,564,752
TOTAL ADDITIONAL BUDGET COST	**$745,174**	**$5,069,801**	**$5,377,337**
TOTAL PROJECT BUDGET COST	**$42,783,966**	**$10,101,618**	**$58,446,505**

2-Jan-17	OPTION NO. 3 MINIMUM RENOVATION	OPTION NO. 3A RENOVATION	OPTION NO. 3B GUT RENOVATION	OPTION NO. 4 1/2 DEMOLITION RENOVATION	OPTION NO. 4A 1/2 DEMOLITION GUT RENOVATION	OPTION NO. 5 NEW CONSTRUCTION	OPTION NO. 5A NEW CONSTRUCTION FUTURE ADDITION	OPTION NO. 5B NEW CONSTRUCTION SHELL CONSTRUCTION
RENOVATION SF	200000	200000	200000	100000	100000	0	0	35038
NEW CONSTRUCTION SF	103898	103898	103898	203898	203898	303898	268860	268860
TOTAL HIGH SCHOOL SF	**303898**	**303898**	**303898**	**303898**	**303898**	**303898**	**268860**	**303898**
SITE IMPROVEMENTS	$2,190,000	$2,690,000	$3,155,000	$8,127,500	$8,127,500	$11,390,000	$11,290,000	$11,390,000
RENOVATION	$13,594,000	$23,304,000	$35,698,000	$11,023,000	$16,547,000	$0	$0	$4,409,532
NEW CONSTRUCTION	$21,441,430	$21,701,175	$23,628,483	$46,262,417	$46,635,551	$67,036,860	$59,953,091	$59,953,091
GENERAL CONTRACTOR MARK-UP	$1,340,115	$1,717,026	$2,249,333	$2,354,865	$2,567,162	$2,823,367	$2,564,751	$2,727,094
SUBTOTAL CONSTRUCTION COSTS	**$38,565,546**	**$49,412,202**	**$64,730,817**	**$67,767,782**	**$73,877,212**	**$81,250,227**	**$73,807,843**	**$78,479,718**
Architect Design Fee @8%	$3,085,244	$3,952,976	$5,178,465	$5,421,423	$5,910,177	$6,500,018	$5,904,627	$6,278,377
Phasing Costs - Additional General Conditions	$1,000,000	$1,000,000	$3,000,000	$1,000,000	$2,000,000	$0	$0	$0
Existing High School - Maintenance Costs	$3,000,000	$3,000,000	$2,000,000	$2,000,000	$2,000,000	$500,000	$500,000	$500,000
Temporary Classroom Trailers	$400,000	$400,000	$800,000	$400,000	$600,000	$200,000	$200,000	$200,000
Construction Management Fee	$1,500,000	$1,500,000	$3,000,000	$2,000,000	$2,500,000	$2,000,000	$2,000,000	$2,000,000
Owner Furniture, Fixtures, & Equipment	$2,000,000	$2,000,000	$2,000,000	$3,000,000	$3,000,000	$4,000,000	$3,500,000	$3,500,000
Contingencty @ 5%	$2,477,539	$3,063,259	$4,035,464	$4,079,460	$4,494,369	$4,722,512	$4,295,624	$4,547,905
Escalation	$4,459,571	$5,513,866	$9,685,114	$7,343,028	$8,089,865	$5,667,015	$5,154,748	$5,457,486
TOTAL HIGH SCHOOL BUDGET COST	**$56,487,900**	**$69,842,303**	**$94,429,860**	**$93,011,693**	**$102,471,624**	**$104,839,772**	**$95,362,842**	**$100,963,486**
PROJECT HIGH SCHOOL COST PER SF	**$185.88**	**$229.82**	**$310.73**	**$306.06**	**$337.19**	**$344.98**	**$354.69**	**$332.23**
MARY ELLEN HENDERSON SF	16700	16700	16700	19700	19700	19700	19700	19700
CENTRAL OFFICE SF	11800	11800	11800	11800	11800	11800	11800	11800
TOTAL ADDITIONAL SF	**28500**	**28500**	**28500**	**31500**	**31500**	**31500**	**31500**	**31500**
ATHLETIC FIELDS	$1,530,628	$1,530,628	$1,570,908	$4,081,674	$4,081,674	$3,974,262	$3,974,262	$3,974,262
MARY ELLEN HENDERSON	$4,575,186	$4,575,186	$4,575,186	$5,320,360	$5,320,360	$5,320,360	$5,320,360	$5,320,360
CENTRAL OFFICE	$3,010,235	$3,010,235	$3,089,451	$3,010,235	$3,010,235	$2,931,018	$2,931,018	$2,931,018
TOTAL ADDITIONAL BUDGET COST	**$9,116,049**	**$9,116,049**	**$9,235,545**	**$12,412,269**	**$12,412,269**	**$12,225,640**	**$12,225,640**	**$12,225,640**
TOTAL PROJECT BUDGET COST	**$65,603,949**	**$78,958,351**	**$103,665,405**	**$105,423,963**	**$114,883,893**	**$117,065,412**	**$107,588,482**	**$113,189,126**

City Council Fact Finding

12. What is the economic spectrum of affordability from a funding perspective?

a. How much can we afford right now with our current policies?
b. If we break policy, what can we afford? What are the repercussions of breaking policy?
c. How much could we afford if we change policy?
d. Are there TIFs, special tax districts, or additional creative funding methods available?
e. Is $120 million possible? What are the bonding and development implications to ensure a stable future for Falls Church?
f. What are the tax implications of each tier across the spectrum?
g. What are the debt timelines associated with each funding option?

Answers:

- **Affordability is a complex. Following the current adopted financial policies, the City's additional debt capacity is approximately $70 million for all projects.**
- **Key assumptions include 4% interest rate on new debt, 2.5% Real Estate Assessed Value Growth, and 2.5% annual growth of other operating expenditures.**
- **The City has modeled additional scenarios where a $112 million school project could be financed if policies are amended.**
  - **One of the most significant changes is the use of Capital Reserves to pay for annual debt service.**
  - **The scenario also includes an assumption of $30 million received as a result of property transfer (lease or sale) in the next 10 years.**
  - **This scenario assumes 30 year debt payout.**
- **This tab contains the following supporting documents:**
  - **Detailed Breakdown of Question 12 and subquestions**
  - **PowerPoint on Affordability**
  - **Supporting Data Tables for Debt Service**
  - **Explanation of Tax Increment Financing (TIF) and Community Development Authority (CDA)**
  - **Risk Analysis Memorandum from Davenport & Company**

QUESTION NO: 12.a

QUESTION: How much can we afford right now with our current policies?

ANSWER: Following the current adopted financial policies, the City's additional debt capacity is approximately $70 million.

This includes the following assumptions:

Interest rate on new debt: 4%
Real Estate Assessed Value Growth: 2.5%
Other Operating Expenditure Growth: 2.5% annual growth

The key policy constraints on the amount of debt the City can issue are as follows:

1. Article VII of the Constitution of the Commonwealth of Virginia limits the City's debt capacity to not more than **10% of the assessed valuation** of taxable real estate property in the City.
2. By City Policy, total General Fund supported debt shall not **exceed 5% of the net assessed valuation** of taxable real estate property in the City.
3. Annual debt service expenditures for all General Fund supported debt shall not exceed **twelve percent (12%)** of total General Fund operating expenditures, including school board transfer and debt service.
4. At least **25% of total debt will be repaid within five years** and at least **50% of total debt within ten years**. What this means is that by policy, the City issues debt with a 20 year term, and with level principal payments.
5. The term of any debt issue shall not exceed the useful life of the capital project/facility or equipment for which the borrowing is intended.
6. The city shall comply with all U.S. Internal Revenue Service arbitrage rebate requirements for bonded indebtedness.
7. The City shall comply with all requirements of Title 15.2 Code of Virginia and all other legal requirements regarding the issuance of bonds and certificates of the City or its debt issuing authorities.
8. Debt shall be defined as bonds, capital leases, lines of credit, and certificates of participation or any other instruments that constitute evidence of indebtedness on the part of the City.
9. The Council shall put to referendum certain general obligation bonds:
   1. Where the aggregate amount of the bond, for the bonded project or portion thereof exceeds ten percent of the General Fund budget for the fiscal year in which the bond(s) are anticipated to be issued.
   2. The referendum requirement does not apply to bonds issued for water, sewer, fire, police and medical services projects.

QUESTION NO: 12.b

QUESTION: If we break policy what can we afford? What are the repercussions of breaking policy?

ANSWER: The City has modelled scenarios where a $112 million school project could be financed if policies are amended, with the most important change being to establish that Capital Reserves can be used to pay, in part, for annual debt service. This scenario also includes the assumption that $30,000,000 will be received as a result of some type of property transfer (lease or sale) over the next 10 years, resulting in a lesser tax burden.

With that change in policy, a plan of finance is possible that would allow the City to "smooth the peak" of debt service for the first 5 years after issuance of debt for the Campus Project. This has the effect of potentially making the project more affordable for the tax payer. It does however carry a higher level of risk.

The existing policies are designed to set a standard of risk that is within the norms for municipal finance for a small city. Possible repercussion of taking on debt in excess of the City's current policies may include:

- Possible downgrade to credit rating which would have the impact of increasing borrowing costs
- Difficulty of addressing other demands to City resources if economic growth remains sluggish
- Increased tax rates
- Debt per Capita would be the highest in Northern Virginia

Attachments:

Debt Service Modelling Scenarios

Risk Analysis by Davenport & Company (Draft)

QUESTION NO: 12.c

QUESTION: How much could we afford if we change policy?

ANSWER: As noted in Question 13b, if the city were to change existing financial policies, we have modelled a scenario where the City issues as much as $145 million, in order to fund $114 million for school facilities, plus 31 million for other Citywide needs in the adopted Capital Improvements program.

The Following assumptions are used:

Interest rate: 4%
Real Estate Assessed Value Growth: 2.5%
Other Operating Expenditure Growth: 2.5%

Current proposed changes to the financial policy regarding debt management include:

1. Increasing unassigned fund balance to 20% if debt service exceeds 12% of expenditures. This would potentially be an additional **$6 million** added to unassigned fund balance by the time the school debt is fully issued in FY2020.
2. Amend the policy to maintain a pay-out ratio of 25% from five years and 50% from ten years to fifteen years, to a new policy whereby
3. Add the requirement to maintain a 10-year pay-out ratio at or above 50% at the end of each adopted five-year CIP.
4. Amend the pay-out ratio policies to allow additional flexibility, as follows:

a. Eliminate the requirement to maintain a pay-out ratio of 25% in five years.
b. Eliminate the requirement to maintain a pay-out ratio of 50% in ten years.
c. Add a new requirement to maintain a 10-year pay-out ratio at or above 50% at the end of each adopted five-year CIP.

QUESTION NO: 12.d

QUESTION: Are there TIFs, special tax districts, or additional creative funding methods available?

ANSWER: Yes. The potential economic development on a portion of the school site can significantly reduce the cost to the tax payers for the school facilities.

For modelling purposes, the following assumptions are currently under consideration:

Land that may be developed: 8-10 acres
Density of development: 1 million square feet (FAR of 2.5 at a minimum)
Land Value: approximately $40 million
Tax Yield: to be modelled as part of the planning process.
TIF (Tax Increment Financing): see paper, attached.
Special Tax District: (see paper, attached)

QUESTION NO: 12.e

QUESTION: Is $120 million possible? What are the bonding and development implications to ensure a stable future of Falls Church?

ANSWER: The adopted CIP calls for a school program estimated at $112 million, plus 2 million in financing costs, for a total of $114 million. As discussed in question 13 b and 13c, this is possible. There are additional risks with this level of debt, as described in the Davenport memo. This scenario is modelled in the attached documents.

QUESTION NO: 12.f

QUESTION: What are the tax implications of each tier across the spectrum?

ANSWER:

	Current Debt Service	**$70,000,000**	**$145,000,000***
Additional Real Estate Tax Rate required over FY2017 debt service levels	N/A	13 cents	8 cents
Impact on Median Homeowner Real Estate Tax Bill		$953	$558
Additional funds needed to maintain unassigned fund balance at 20% of expenditures if proposed policy were adopted			$6,000,000 or approximately 3.5 cents on the RE Tax Rate over the next 4 years

*Borrowing at this level includes the assumption that $30,000,000 will be received as a result of some type of property transfer (lease or sale) over the next 10 years, resulting in a lesser tax burden.

QUESTION NO: 12.g

QUESTION: What are the debt timelines associated with each funding option?

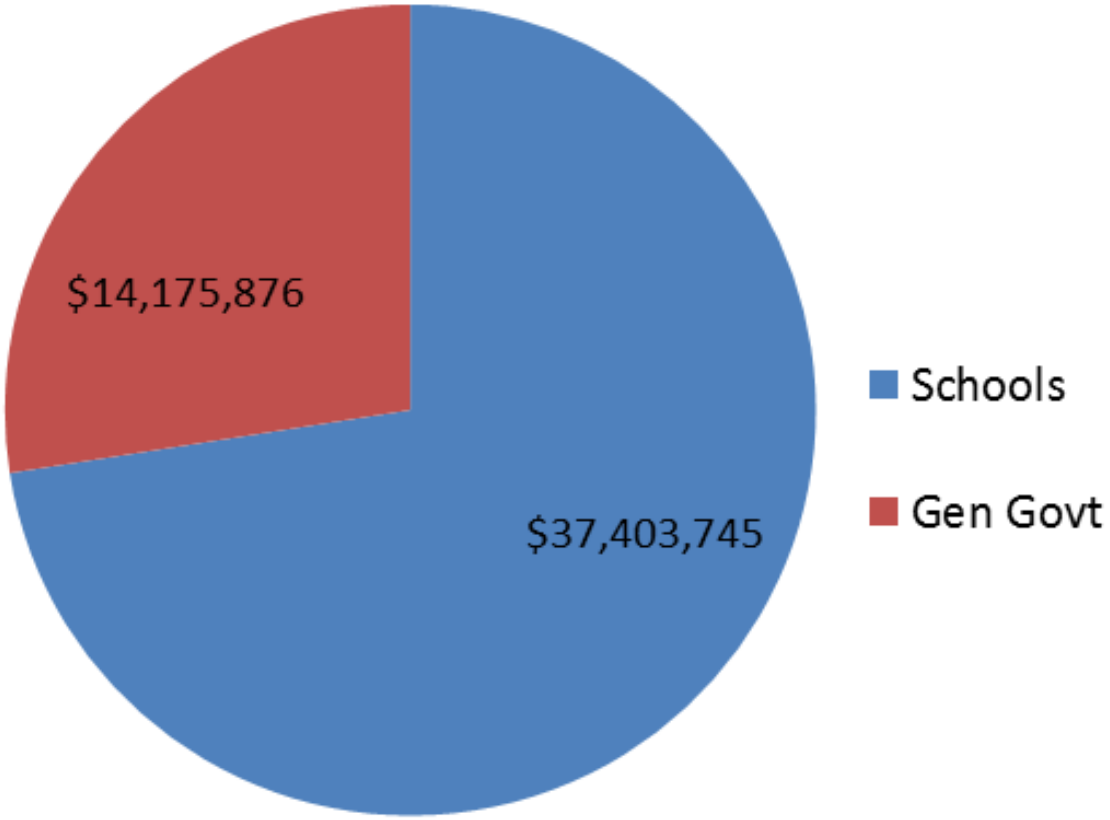
ANSWER: The models were run with the following timelines of debt issuance:

Fiscal Year of Issuance	**$70,000,000**	**$145,000,000**
FY2018	$20,000,000	$10,200,000
FY2019	$30,000,000	$56,100,000
FY2020	$10,000,000	$47,940,000
FY2021	$10,000,000	

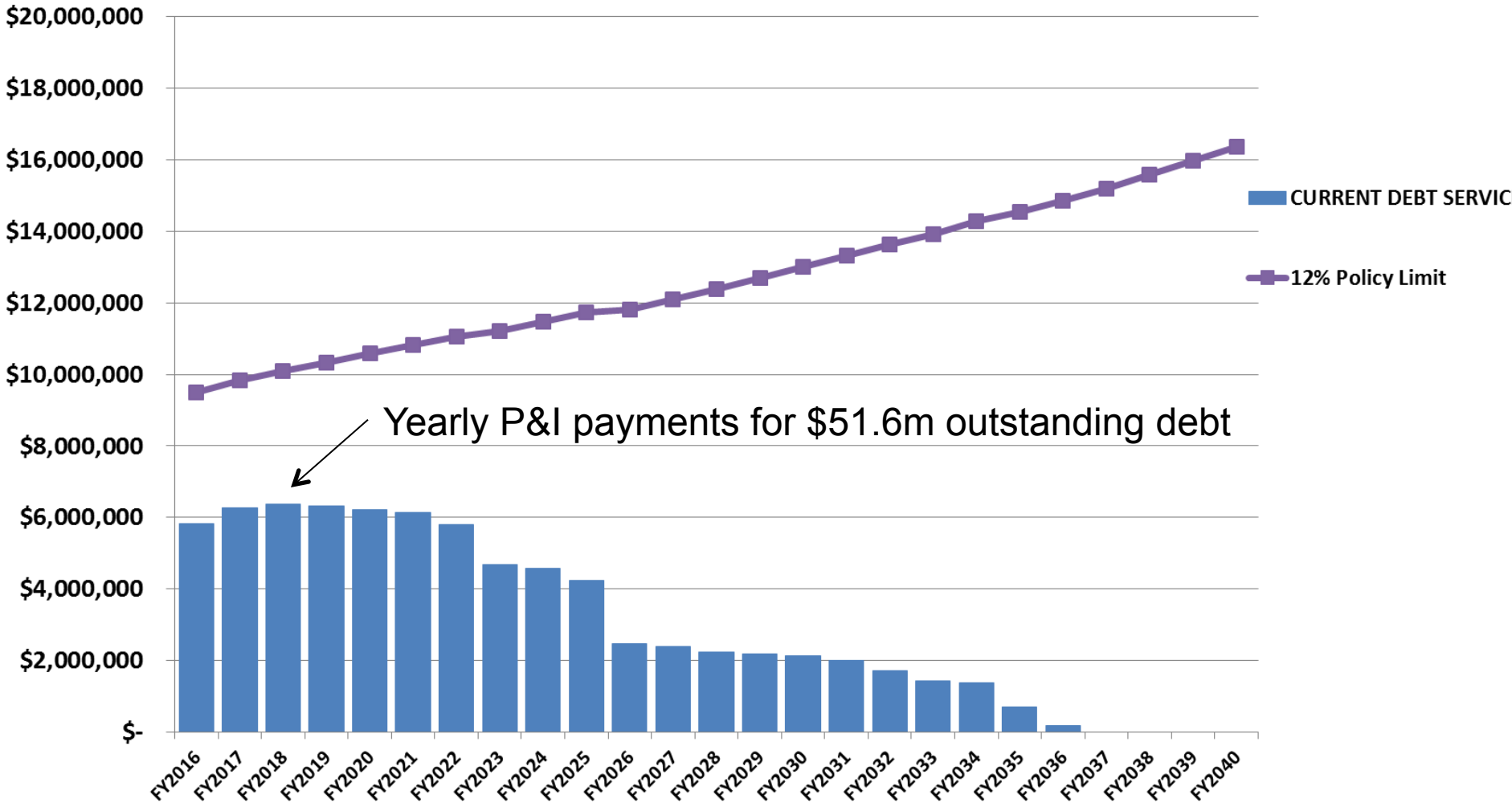
Question 12: Affordability

- Factual: What are Industry Metrics?
  - Debt to Assessed Value (AV)
    - 10% state law cap; 5% City policy cap
  - Debt service to total expenses
    - 12% City policy cap. No state law cap
  - Pay-out ratio
    - Policy: 25% of debt retired in 5 years; 50% in 10 years.
  - Debt per capita
    - Regional comparisons; no law or policy cap.
- Opinion: What is reasonable for tax payers?

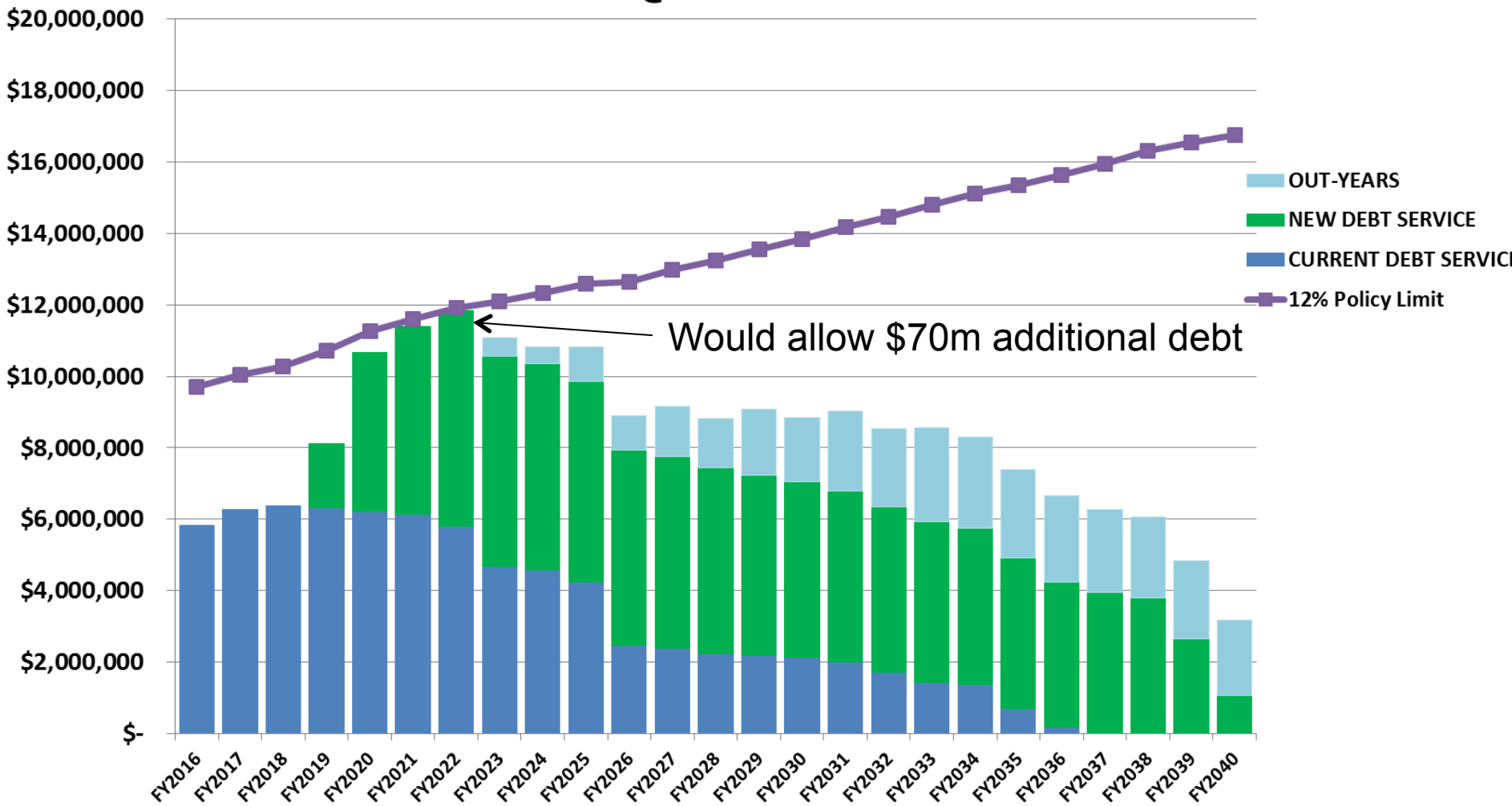
Outstanding Tax-Supported Debt
December 2016
$51.6 Million Total

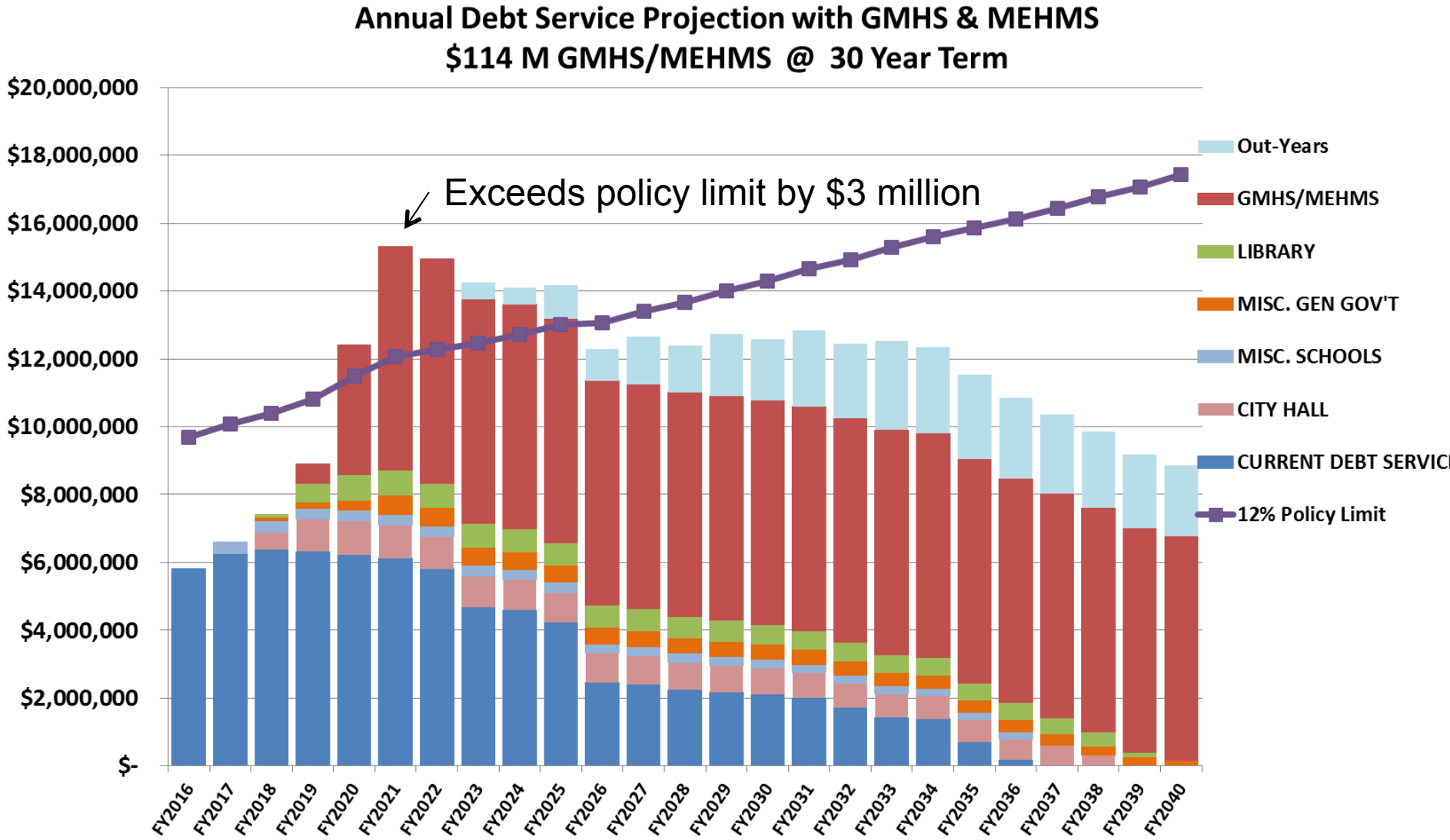


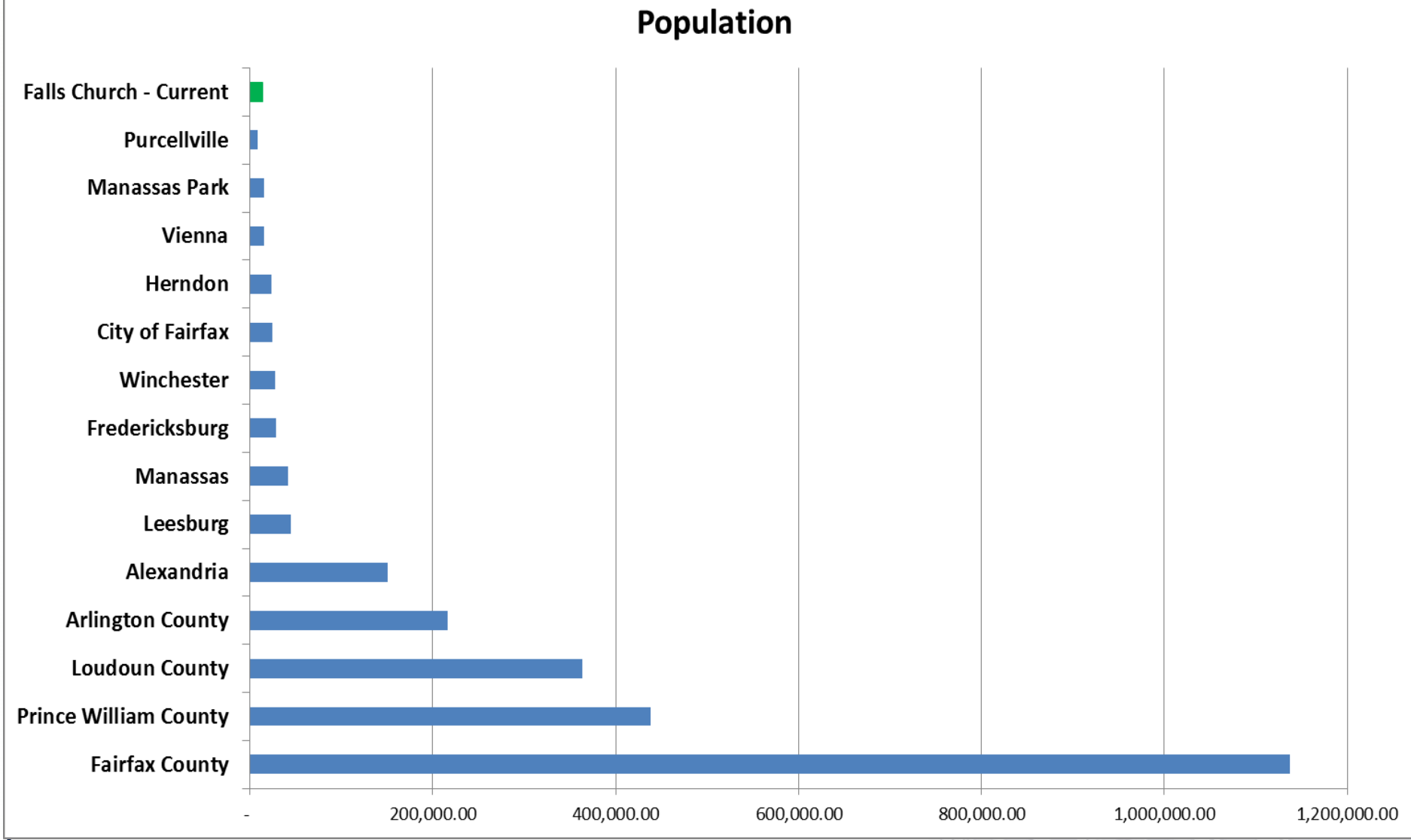
Annual Debt Service Projection - Current Debt Service

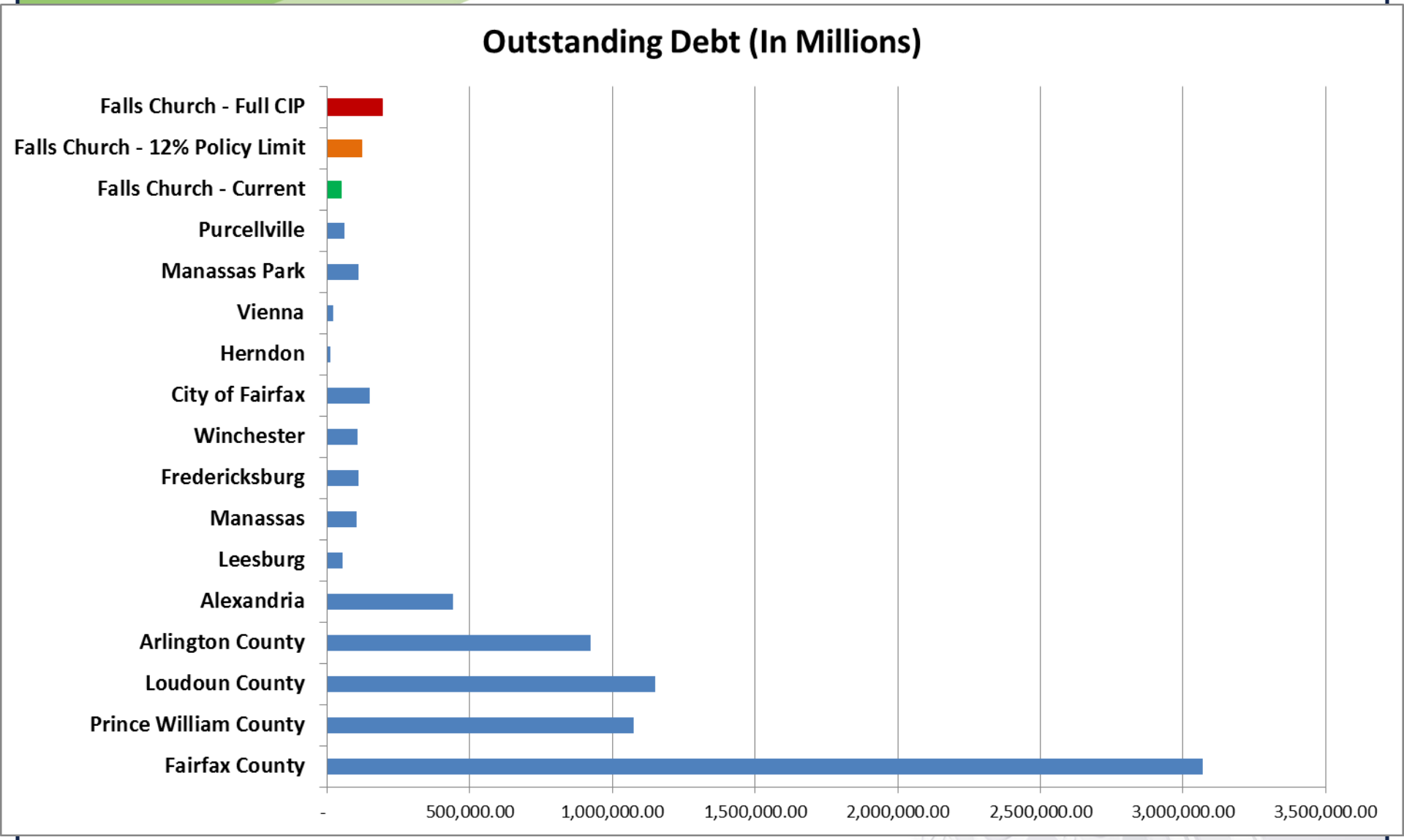


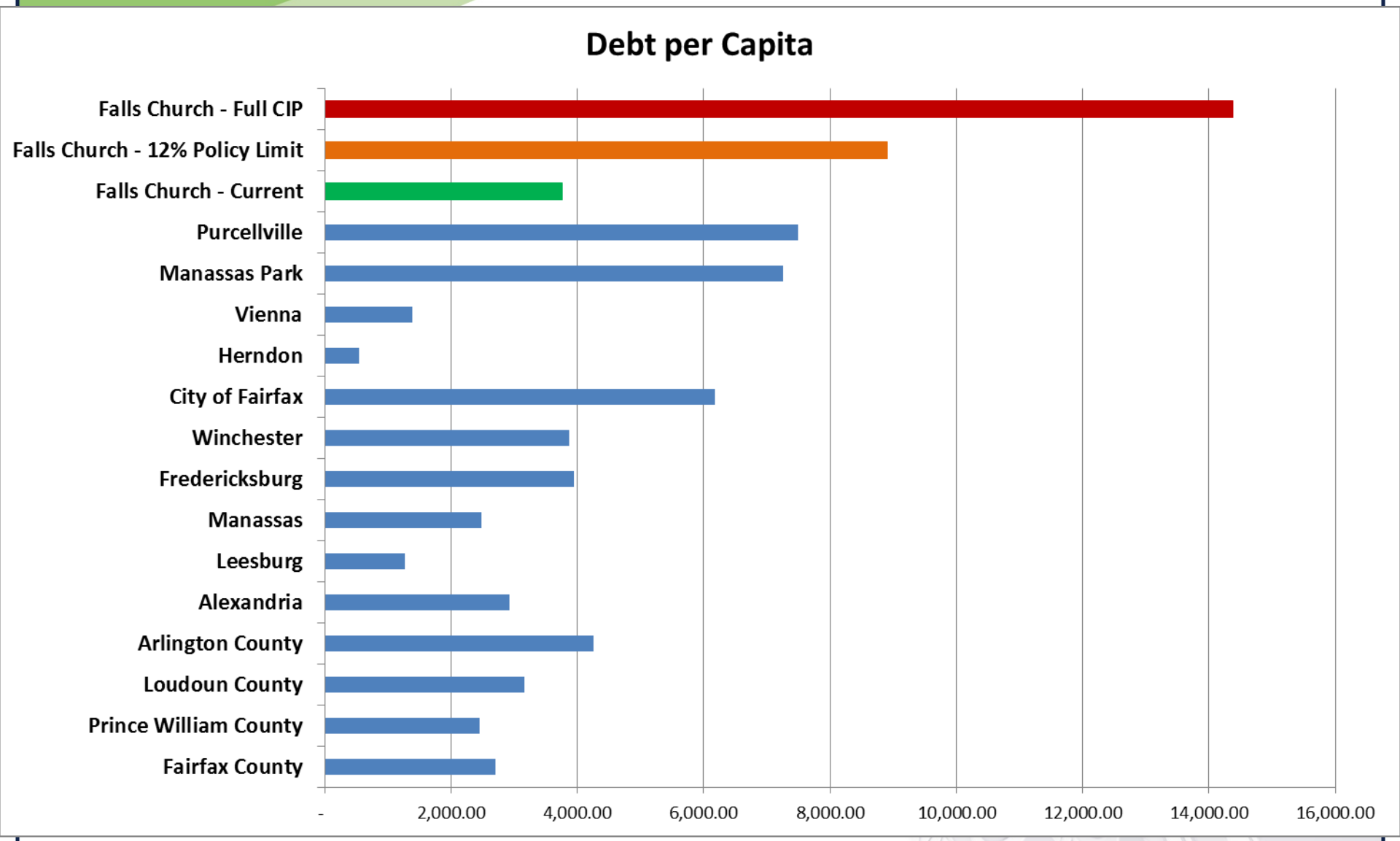
Annual Debt Service Projection - Debt Policy Limits @ 20 Year Term



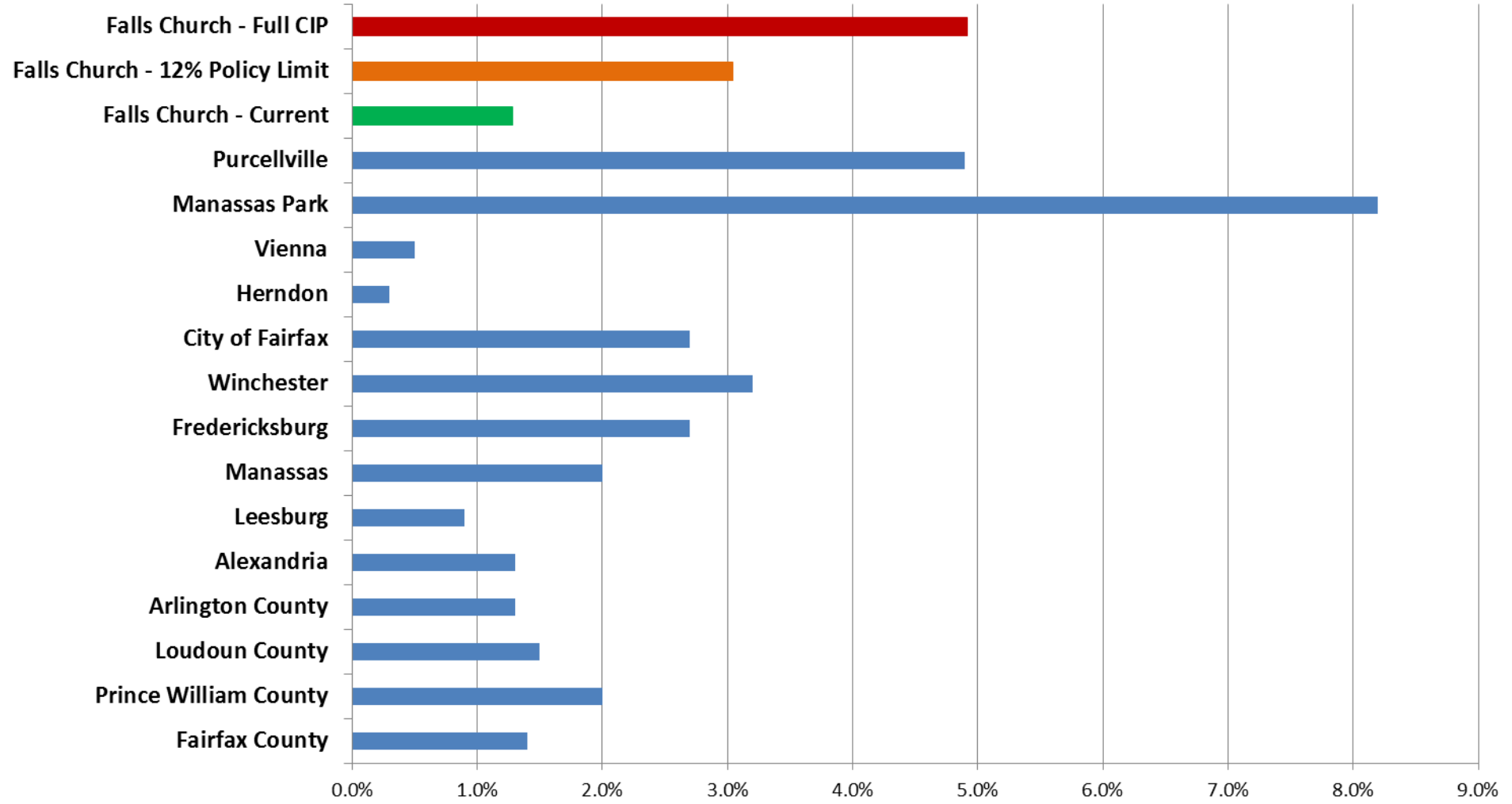

Annual Debt Service Projection with GMHS & MEHMS
$114 M GMHS/MEHMS @ 30 Year Term
Exceeds policy limit by $3 million
$20,000,000
$18,000,000
$16,000,000
$14,000,000
$12,000,000
$10,000,000
$8,000,000
$6,000,000
$4,000,000
$2,000,000
$-
FY2016
FY2017
FY2018
FY2019
FY2020
FY2021
FY2022
FY2023
FY2024
FY2025
FY2026
FY2027
FY2028
FY2029
FY2030
FY2031
FY2032
FY2033
FY2034
FY2035
FY2036
FY2037
FY2038
FY2039
FY2040
Out-Years
GMHS/MEHMS
LIBRARY
MISC. GEN GOV'T
MISC. SCHOOLS
CITY HALL
CURRENT DEBT SERVICE
12% Policy Limit


Population
Falls Church - Current
Purcellville
Manassas Park
Vienna
Herndon
City of Fairfax
Winchester
Fredericksburg
Manassas
Leesburg
Alexandria
Arlington County
Loudoun County
Prince William County
Fairfax County
-
200,000.00
400,000.00
600,000.00
800,000.00
1,000,000.00
1,200,000.00

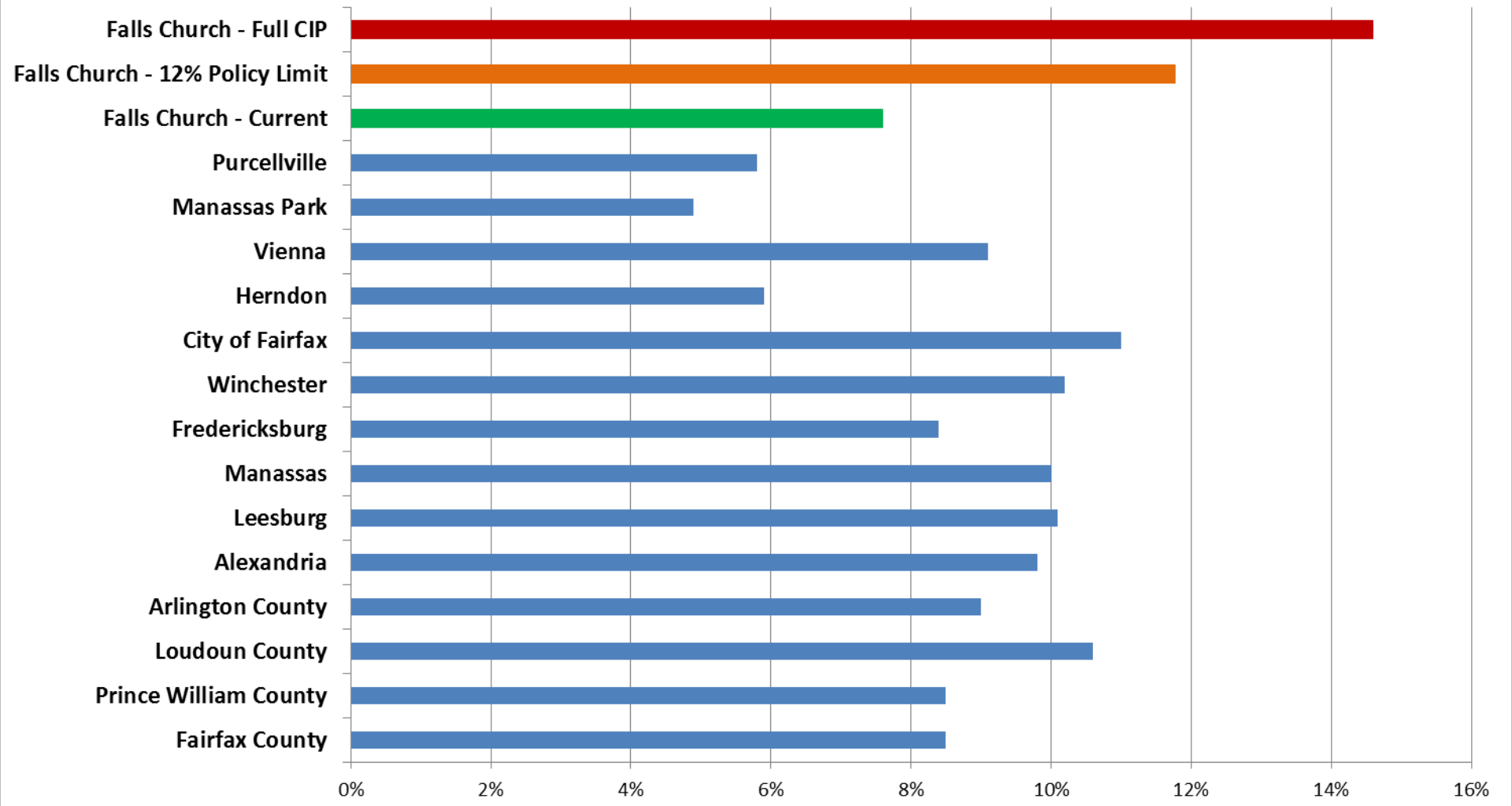

Outstanding Debt (In Millions)
Falls Church - Full CIP
Falls Church - 12% Policy Limit
Falls Church - Current
Purcellville
Manassas Park
Vienna
Herndon
City of Fairfax
Winchester
Fredericksburg
Manassas
Leesburg
Alexandria
Arlington County
Loudoun County
Prince William County
Fairfax County
-
500,000.00
1,000,000.00
1,500,000.00
2,000,000.00
2,500,000.00
3,000,000.00
3,500,000.00

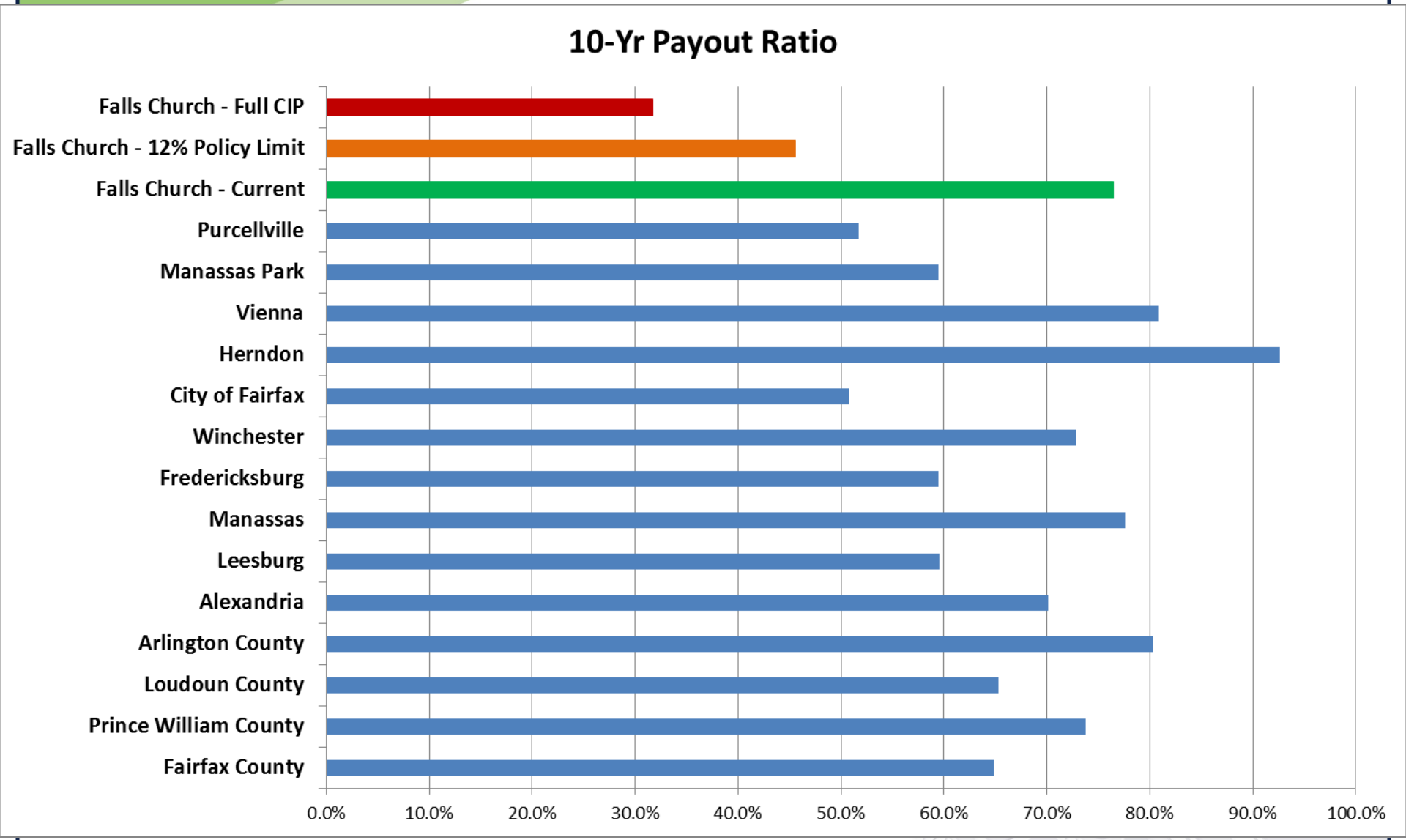

Debt per Capita
Falls Church - Full CIP
Falls Church - 12% Policy Limit
Falls Church - Current
Purcellville
Manassas Park
Vienna
Herndon
City of Fairfax
Winchester
Fredericksburg
Manassas
Leesburg
Alexandria
Arlington County
Loudoun County
Prince William County
Fairfax County
-
2,000.00
4,000.00
6,000.00
8,000.00
10,000.00
12,000.00
14,000.00
16,000.00

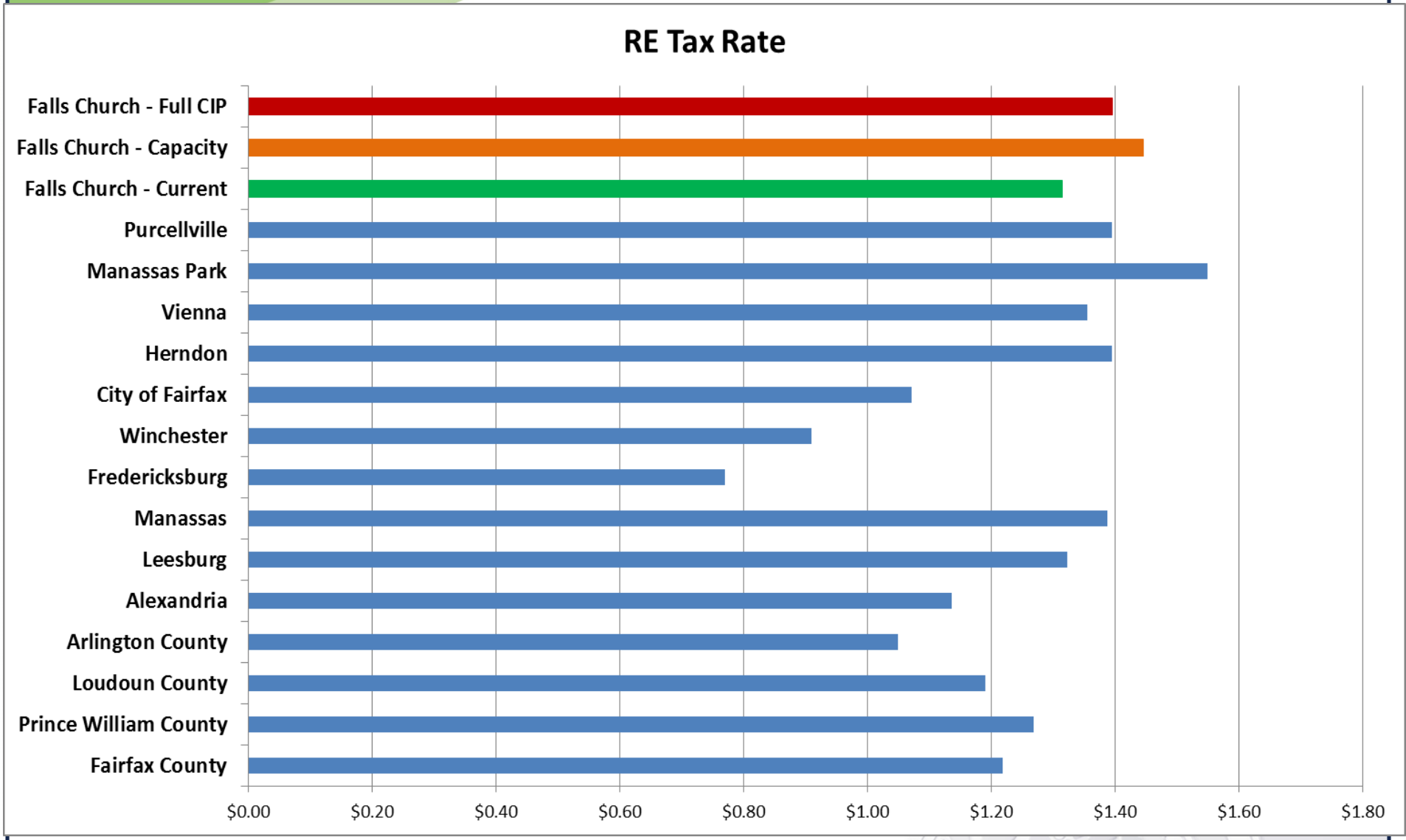
Debt to Assessed Value



Debt Svc vs. Expenditures




10-Yr Payout Ratio
Falls Church - Full CIP
Falls Church - 12% Policy Limit
Falls Church - Current
Purcellville
Manassas Park
Vienna
Herndon
City of Fairfax
Winchester
Fredericksburg
Manassas
Leesburg
Alexandria
Arlington County
Loudoun County
Prince William County
Fairfax County
0.0%
10.0%
20.0%
30.0%
40.0%
50.0%
60.0%
70.0%
80.0%
90.0%
100.0%


RE Tax Rate
Falls Church - Full CIP
Falls Church - Capacity
Falls Church - Current
Purcellville
Manassas Park
Vienna
Herndon
City of Fairfax
Winchester
Fredericksburg
Manassas
Leesburg
Alexandria
Arlington County
Loudoun County
Prince William County
Fairfax County
$0.00
$0.20
$0.40
$0.60
$0.80
$1.00
$1.20
$1.40
$1.60
$1.80

Two Debt Model Scenarios

- *See Hand-out*

Risk Analysis*

- AV Growth Rate Risk (modeled 2.5% growth)
- Interest Rate Risk (modeled 4%)
- Property Proceeds (modeled $30M)
- Credit Downgrade
- Cost Control Risk
- Political Risk

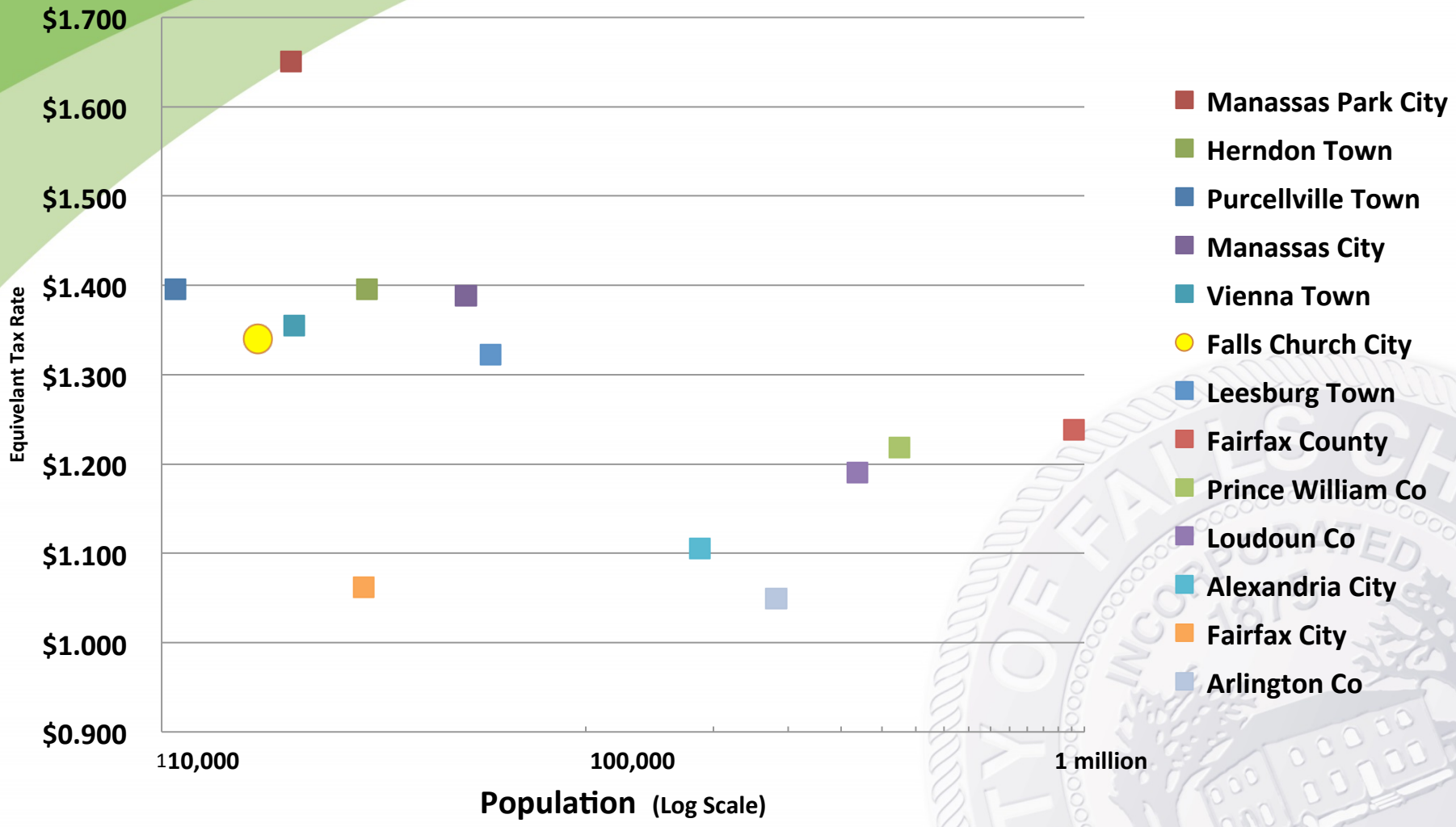
*Per Davenport Draft Memo dated 11/30/2016

Mitigating Strategies*

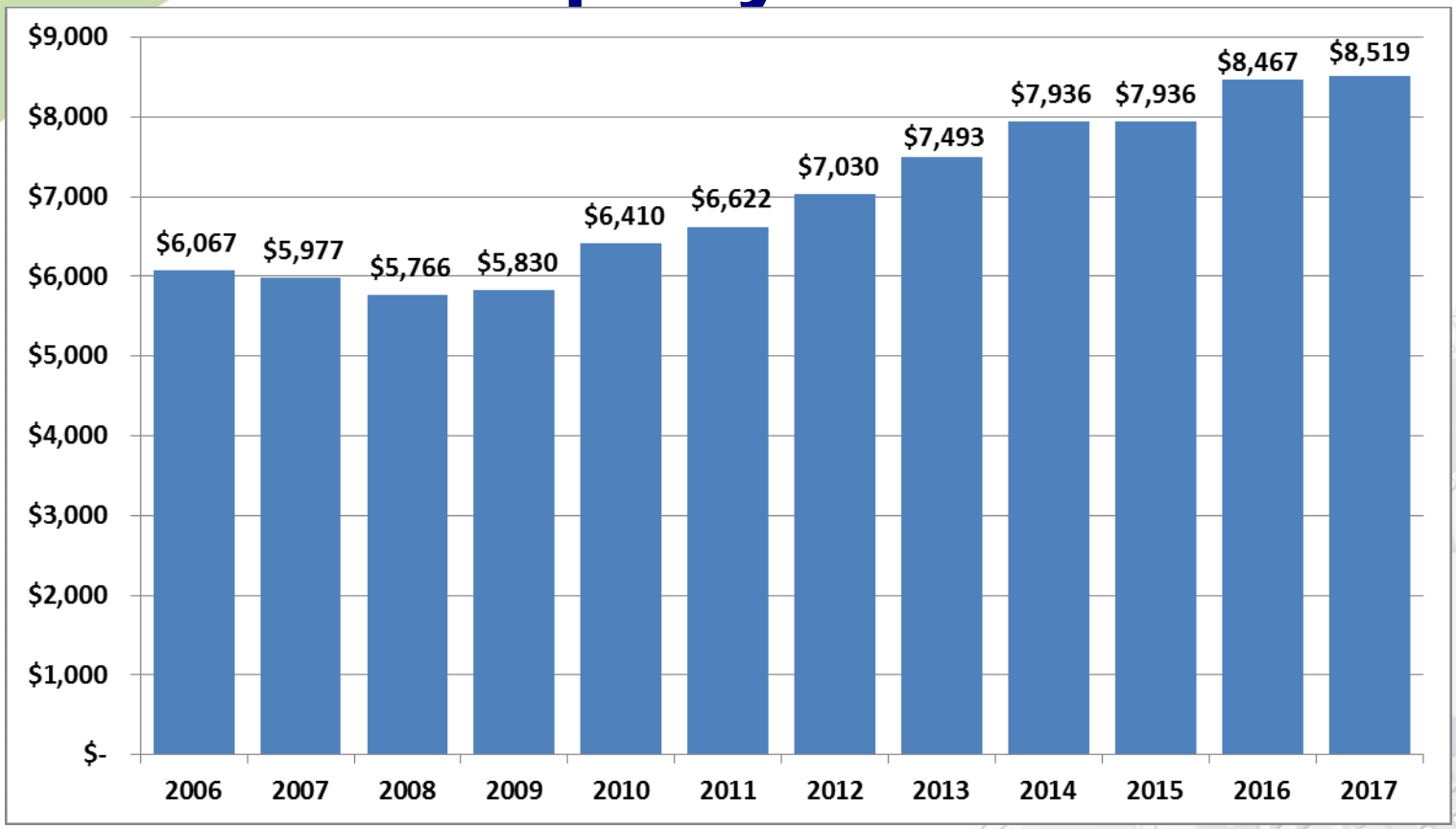
- Enhanced General Fund Reserves
  - 20% recommended
- Comprehensive Plan of Finance
  - Public support (referendum)
  - Clear & public discussion of the tax implications
  - Plan not overly reliant on external risk such as property proceeds
- Strategic Debt Structuring

*Per Davenport Draft Memo dated 11/30/2016

Tax Rate and Population



Median Home Owner Property Tax Bill



2017 median home value: $647,800

	Population	RE Tax Rate	Outstanding Debt (In Millions)	10-Yr Payout Ratio	Debt per Capita	Debt to Assessed Value	Debt Svc vs. Expenditures
Fairfax County	1,137,538.00	**1.218**	3,070,389.00	64.8%	2,699.00	1.4%	9%
Prince William County	438,580.00	**1.268**	1,074,447.00	73.8%	2,450.00	2.0%	9%
Loudoun County	363,524.00	**1.19**	1,148,829.00	65.3%	3,160.00	1.5%	11%
Arlington County	216,700.00	**1.049**	923,053.00	80.3%	4,260.00	1.3%	9%
Alexandria	150,575.00	**1.136**	440,695.00	70.1%	2,927.00	1.3%	10%
Leesburg	44,247.00	**1.323**	55,810.00	59.6%	1,261.00	0.9%	10%
Manassas	41,705.00	**1.388**	103,282.00	77.6%	2,476.00	2.0%	10%
Fredericksburg	28,213.00	**0.77**	111,192.00	59.5%	3,941.00	2.7%	8%
Winchester	27,543.00	**0.91**	106,610.00	72.9%	3,871.00	3.2%	10%
City of Fairfax	24,400.00	**1.072**	150,897.00	50.8%	6,184.00	2.7%	11%
Herndon	23,592.00	**1.395**	12,816.00	92.6%	543.00	0.3%	6%
Vienna	15,687.00	**1.355**	21,641.00	80.9%	1,380.00	0.5%	9%
Manassas Park	15,174.00	**1.55**	110,089.00	59.5%	7,255.00	8.2%	5%
Purcellville	8,075.00	**1.395**	60,525.00	51.7%	7,495.00	4.9%	6%
Falls Church - Current	13,601.00	1.315	51,124.62	76.4%	3,759.00	1.3%	8%
Falls Church - Capacity	13,601.00	1.445	121,125.00	45.6%	8,906.00	3.0%	12%
Falls Church - Full CIP	13,601.00	1.395	195,620.00	31.8%	14,383.00	4.9%	15%

TIF's and CDA's:

What Are They and Do They Make Sense for the GMHS Campus Site?

Tax Increment Financing (TIF)

TIF is a method to finance public improvements by diverting some or all of a stream of new tax revenue generated by development in a designated district for a specific period of time. Taxes diverted through TIF can be used to pay debt service on bonds issued by a city or can be used on a pay-as-you-go basis for eligible purposes, often public infrastructure to encourage private investment in new development.

TIF is not additional tax revenue over and above taxes produced by new development. **Other special taxing mechanisms, such as Community Development Authorities, can be established to levy additional ad valorem taxes on properties within a district for public improvements or programming.**

To establish a TIF district, a city designates the boundaries of a project area, advertises a plan for the financing and use of TIF revenue over a specific period of time, and holds two public hearings prior to approval of a TIF district and plan. A "base" value for properties located within a TIF district is set at January 1 of the year preceding establishment of the district. Presumably at the GMHS site, timing would occur to lock in a base value of *zero* for properties on land with no taxable value prior to transfer from public to private ownership. Value subsequently generated through sale of properties, construction of taxable structures, personal property, and business taxes, would all be considered *incremental* revenue available for specific TIF district uses. Revenue identified and diverted through TIF, however, is revenue *not* available to the City's general fund.

Use of TIF revenue to finance school-related costs provides no advantage to the City because the same revenue can be utilized out of the general fund for those purposes. **If a TIF district is established, some incremental revenue could be diverted for non-school uses such as public infrastructure or other facilities in support of private development. For example, an athletic facility and/or a performance center could be supported with TIF revenue, perhaps in a public-private partnership with developers seeking an anchor attraction for the site. Again, any incremental revenue diverted for these or other public purposes is revenue not available to the City's general fund.**

Community Development Authority (CDA)

Another approach is for the City to create a CDA, an independent corporate entity and special tax district. At least 51 percent of landowners in a proposed district must petition the City to establish a CDA. CDAs can expedite development projects by encouraging public/private partnerships to finance infrastructure and other public improvements. The special CDA tax is limited to 25 cents/$100 assessed value unless all landowners request a *greater* tax. A detailed development plan identifying public improvements, facilities, or programming is necessary to establish a CDA district.

CDAs have independent authority to sell revenue bonds or operate pay-as-you-go. CDA revenue can be used to finance:

- **public infrastructure, including sanitary and stormwater sewers, roads, and sidewalks;**
- **public facilities, including recreational and cultural facilities, and public parking;**
- **special services such as marketing, security and maintenance;**
- **purchase of development rights to be dedicated as easements for conservation or open space; or**
- **acquisition of land.**

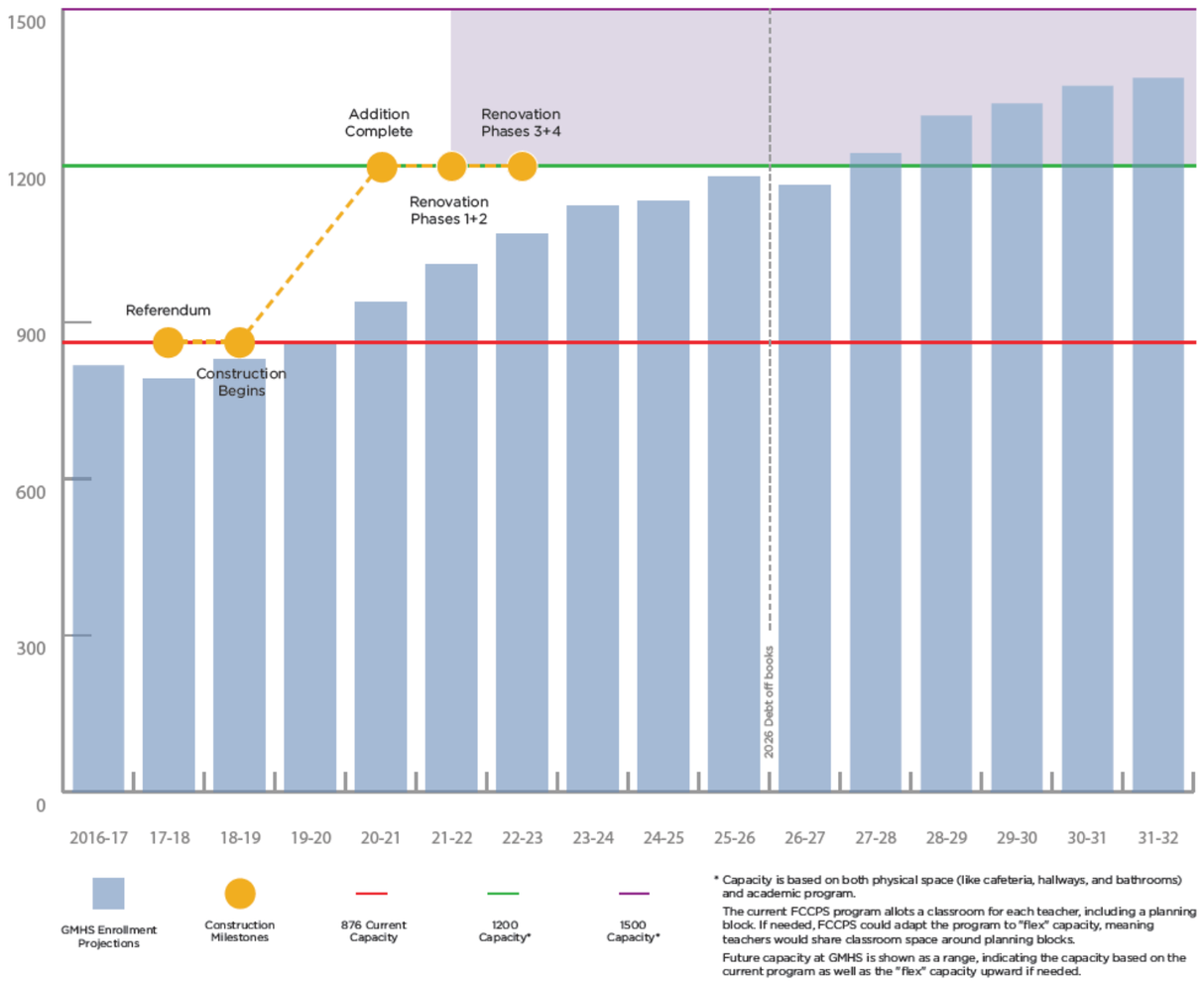
February 4, 2017 Community Meeting - Discussion Points

Discussion Topic #1
Minimal Renovation & Addition

Option 3 and its subsets address capacity needs by constructing an addition to the existing school footprint. They address current facility conditions with needed renovations. By maintaining the existing footprint, Option 3 does not allow the opportunity for any economic development.

Option 3 renovations include roof, HVAC equipment, fire alarm, and minor IT improvements. Several facility components like bathrooms, gymnasium, media center and auditorium would be kept. Kitchen and cafeteria would be expanded.

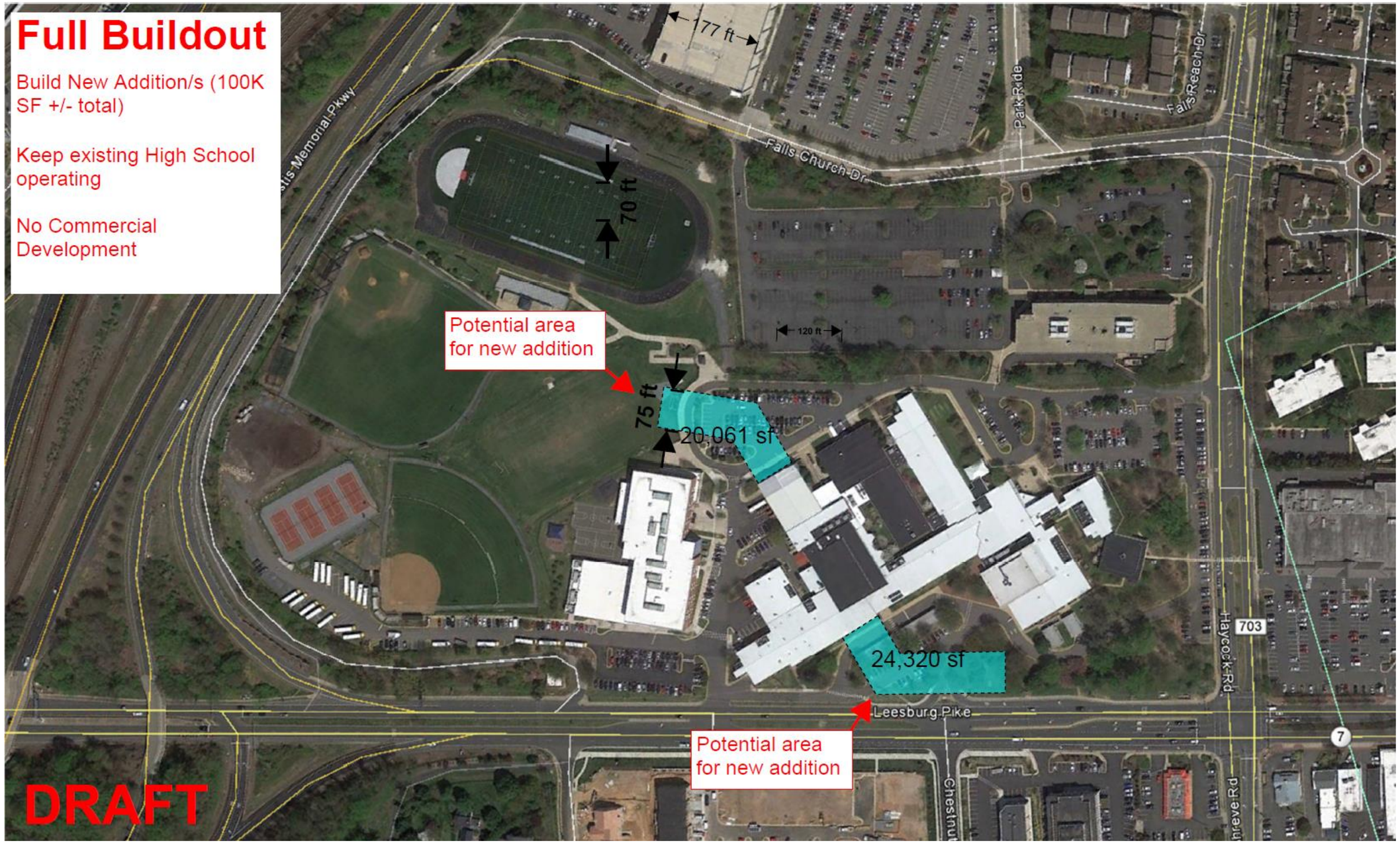
DISCUSSION FEATURES	
Advantages	Renovating with a small addition is the most fiscally conservative pathway to address concerns.
Risks	Addition and renovation have a longer project duration and more impact on students and education. Lower life-expectancy for the building. Least energy efficient, which results in increased operational costs. Uncertainty in long-term systems (i.e., anticipate surprises). Opportunity cost of no economic development potential.
Capacity	1200 (Current Program) - SY 2022 1500 (Flex Program) - SY 2022
Total Budget	$65 million
Years to Complete	5 Years
Facility Life	20-25 Years
Economic Development	None
MEHMS Capacity Met	Yes



Participants: Write your comments for this topic on the **BLUE** index card, they will be collected and posted.

February 4, 2017 Community Meeting - Discussion Points

Discussion Topic #1: Renovation & Addition Conceptual Design



Participants: Write your comments for this topic on the **BLUE** index card, they will be collected and posted.

FALLS CHURCH CITY PUBLIC SCHOOLS

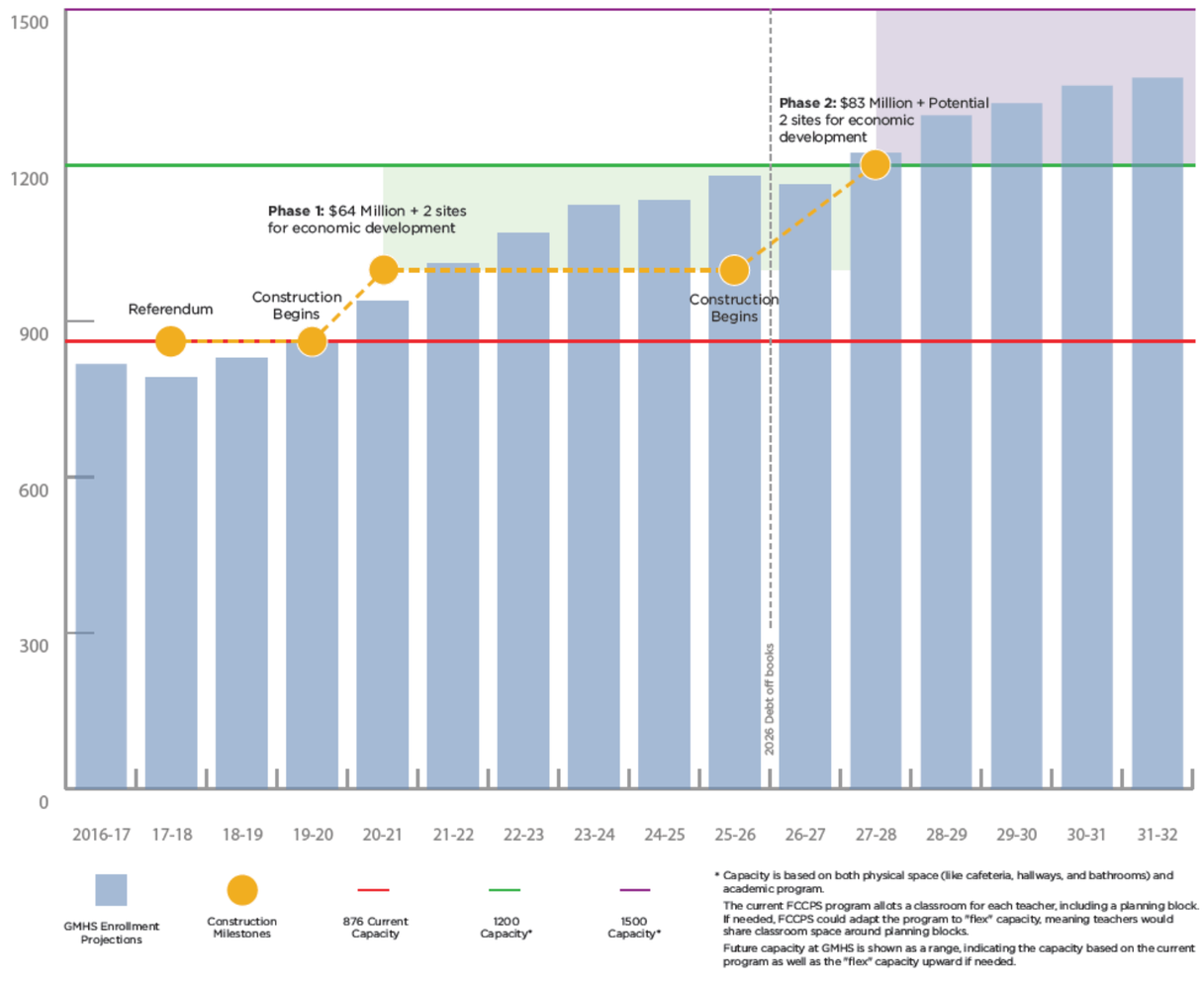
CITY OF FALLS CHURCH

Discussion Topic #2
Build New High School In Two Phases

Option 2 and its subsets examine phased pathways to construction of a complete new school. This eventually allows maximum use of land for economic development.

Option 2 accomplishes the full project in two phases, rather than three or four outlined in other phased considerations. Phase 1 is larger and focuses on important programming components for science, arts, labs, and shared space. Some of these programs, such as an auditorium space, could be shared by MEHMS.

DISCUSSION FEATURES	
Advantages	Phasing the project spreads the immediate debt over time. Allows for future reassessment after initial phase to evaluate next steps.
Risks	Phasing makes the overall project cost the most expensive. Logistics for phases are more complicated and difficult. Students are impacted longer. The cost of money is uncertain for future borrowing. Political will to continue the project in the future is unknown.
Capacity	1050 (Current Program) - SY 2021 1200 (Flex Program) - SY 2021 1200 (Current Program) - SY 2028 1500 (Flex Program) - SY 2028
Total Budget	$147 million
Years to Completion	12 Years
Facility Life	50 Years
Economic Development	2 sites available in 2021 2 sites available in 2028
MEHMS Capacity Met	Yes



* Capacity is based on both physical space (like cafeteria, hallways, and bathrooms) and academic program.

The current FCCPS program allots a classroom for each teacher, including a planning block. If needed, FCCPS could adapt the program to "flex" capacity, meaning teachers would share classroom space around planning blocks.

Future capacity at GMHS is shown as a range, indicating the capacity based on the current program as well as the "flex" capacity upward if needed.

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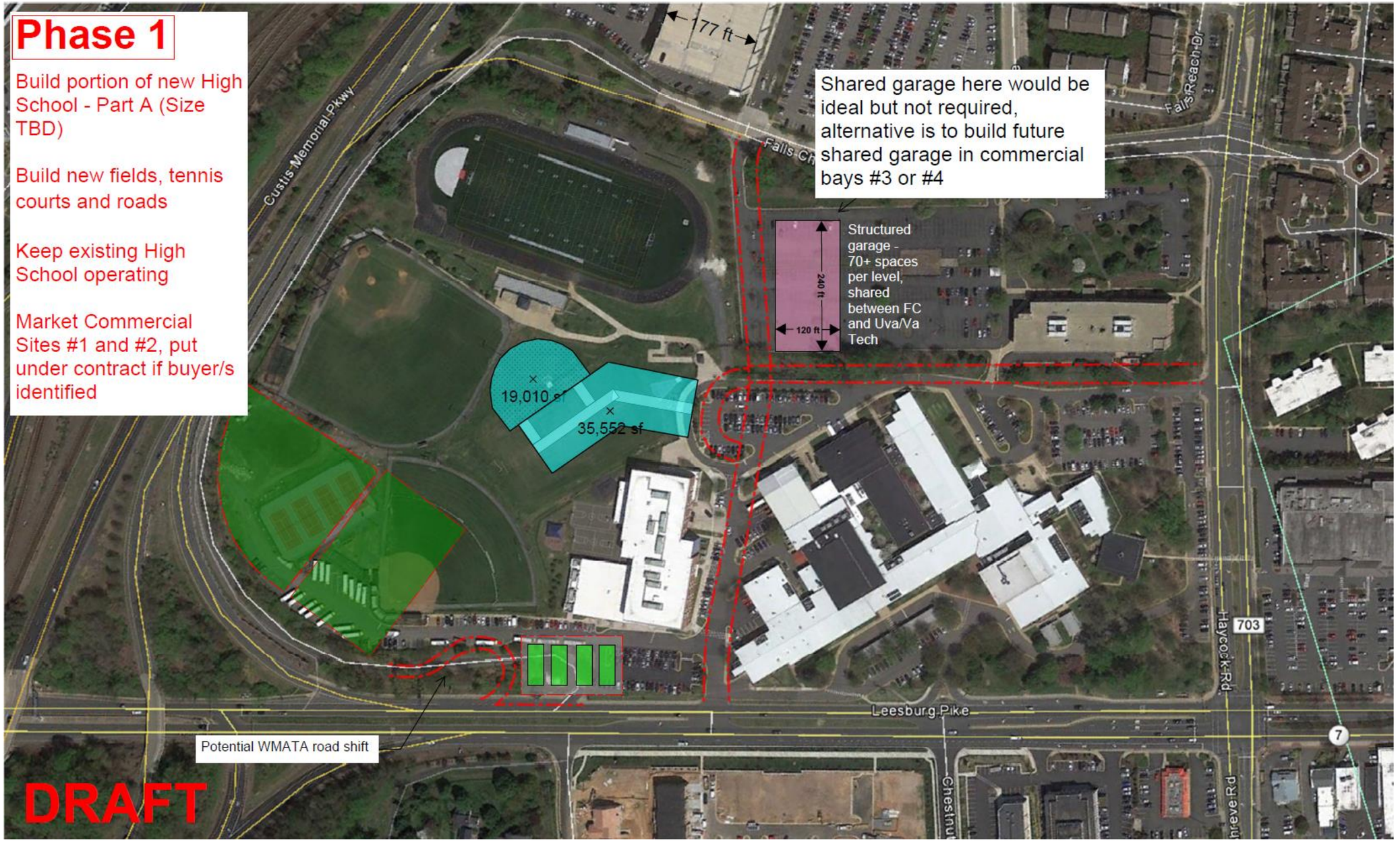
February 4, 2017 Community Meeting - Discussion Points

Discussion Topic #2: Build New High School in Two Phases Conceptual Design



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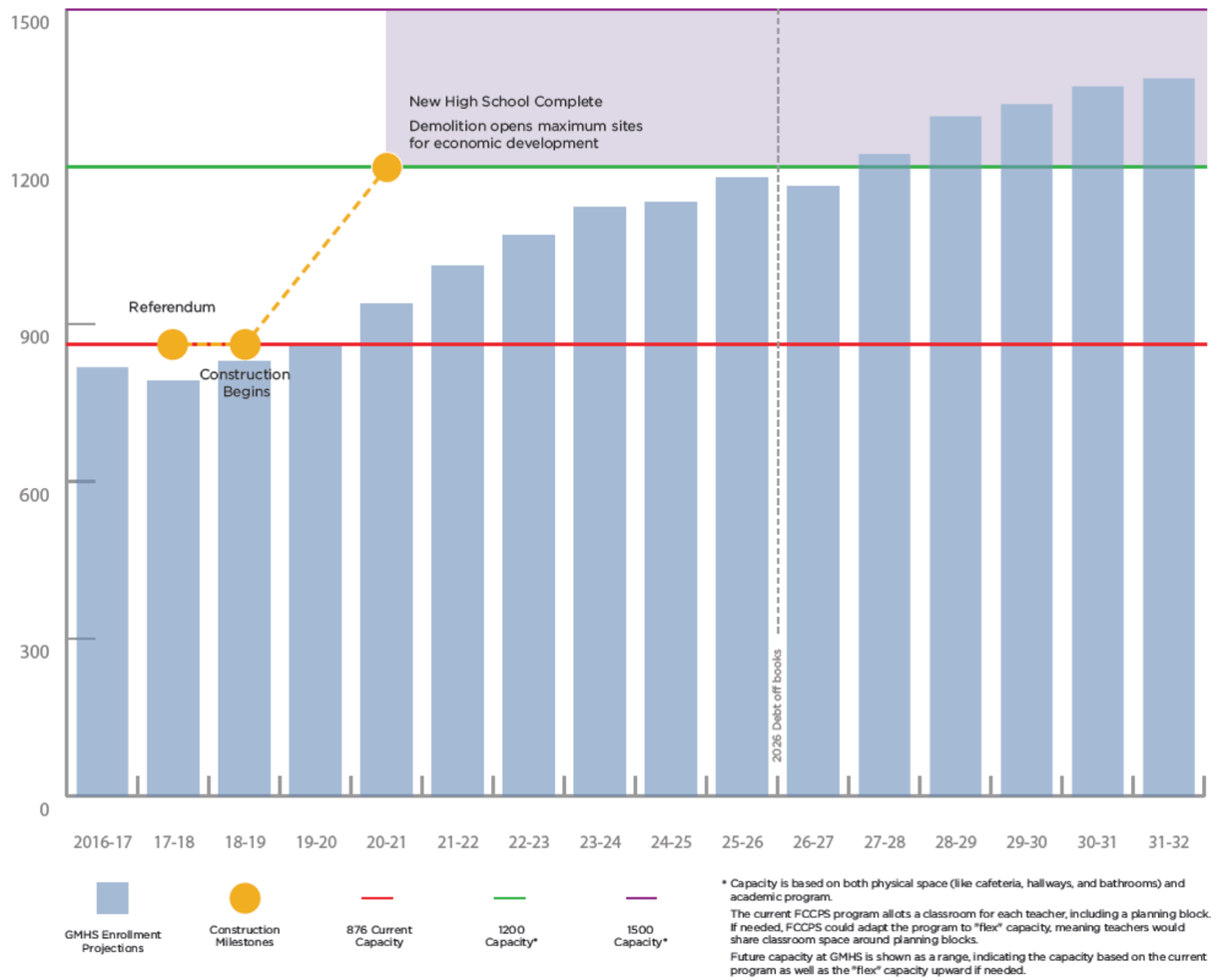
FALLS CHURCH CITY PUBLIC SCHOOLS

CITY OF FALLS CHURCH

Discussion Topic #3
Build New High School One Phase

Option 5 and its subsets assess immediate construction opportunities for a new school building adjacent to the existing GMHS footprint, providing the opportunity for the maximum economic development potential as quickly as possible.

DISCUSSION FEATURES	
Advantages	This project addresses long-term capacity immediately. Full economic development potential is available earliest. Reduces the impact on students and education.
Risks	Highest immediate expense. Market risk, depending on unknown future economic development potential. Financing goes outside of fiscal policy.
Capacity (Maximum)	1200 (Current Program) – SY 2021 1500 (Flex Program) – SY 2021
Total Budget	$117 million
Years to Completion	4 Years
Facility Life	50 Years
Economic Development	4 sites in 2021
MEHMS Capacity Met	Yes



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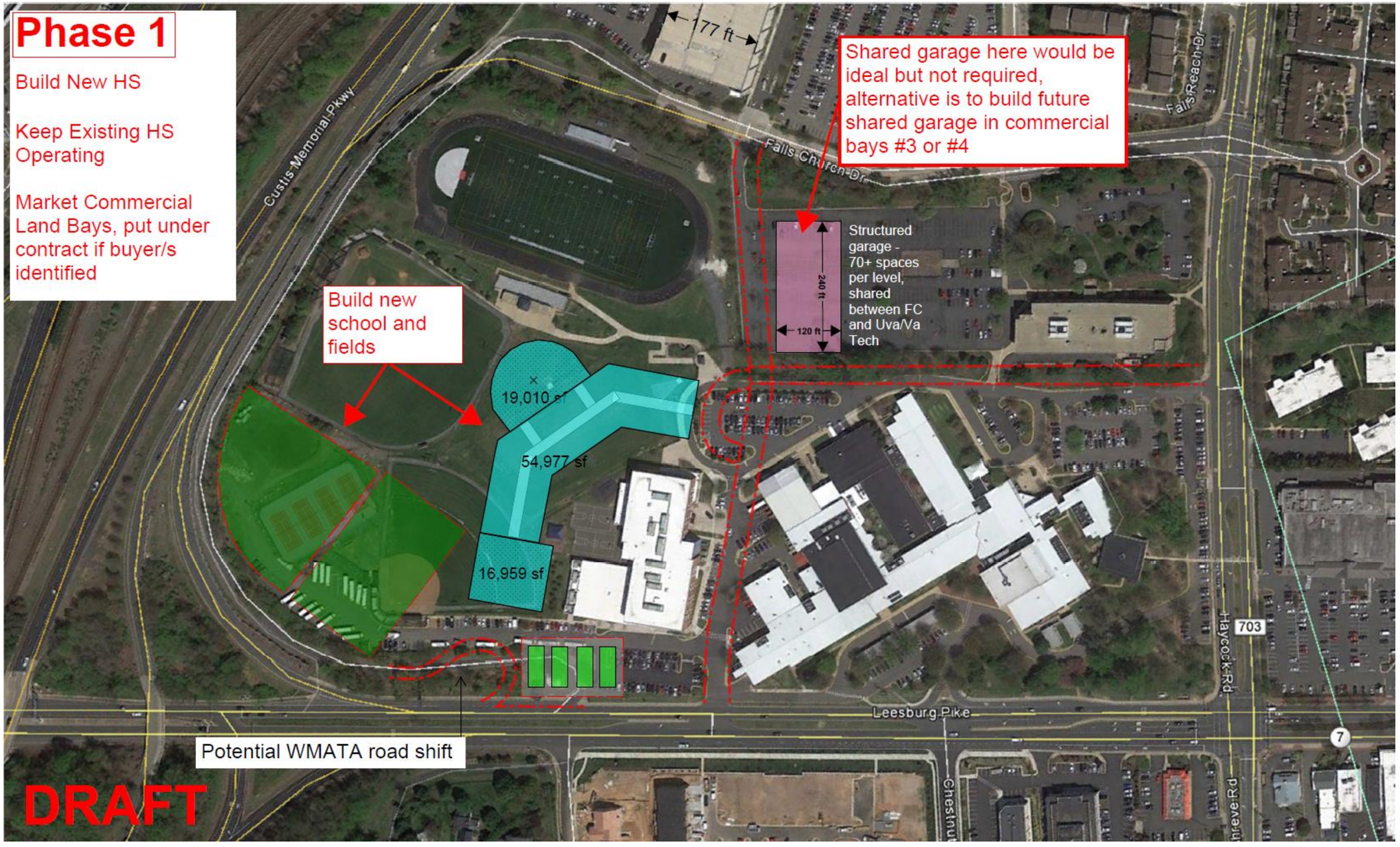
February 4, 2017 Community Meeting - Discussion Points

Discussion Topic #3: Build New High School One Phase Conceptual Design



Participants: Write your comments for this topic on the **GREEN** index card, they will be collected and posted.

Discussion Topic #4: Economic Development Opportunities

What Does Economic Development Mean for the GMHS Campus

- City can use **up to** 10 acres for commercial development
  - School site: 34 acres
  - Sale or lease of a portion of the campus.
- Create new tax revenue to pay for bonds for a new high school
- Create a great "place" on the western end of our city

If done right, it can be something we will all enjoy and be proud of.

January 31, 2016 1

How much potential Economic Development?

- 10 acres: $30M to $40M value
- Tax Yield potential:
  - $400k to 500k per acre
  - $4 to $5 M in annual taxes could finance $50 to $80 million in debt, depending on financing terms

January 31, 2016 2

What Kind of Economic Development?

- Potentially four developable parcels
- Building heights similar to recent projects in City
- Actual uses and density will be set by City through land entitlement process
  - Hotel; Office; Retail; Entertainment; and Residential

January 31, 2016 3

Potential for Shared Uses

- Commercial development must complement and fit with school campus.
- Some Ideas:
  - **Conference facilities shared between a new hotel and schools**
  - **Shared parking for school events**
  - **Central office space in a larger office building**
  - **Possibly a shared ice rink, or pool facility**
  - **A shared plaza or open space**
  - **Shared performance space**

January 31, 2016 4

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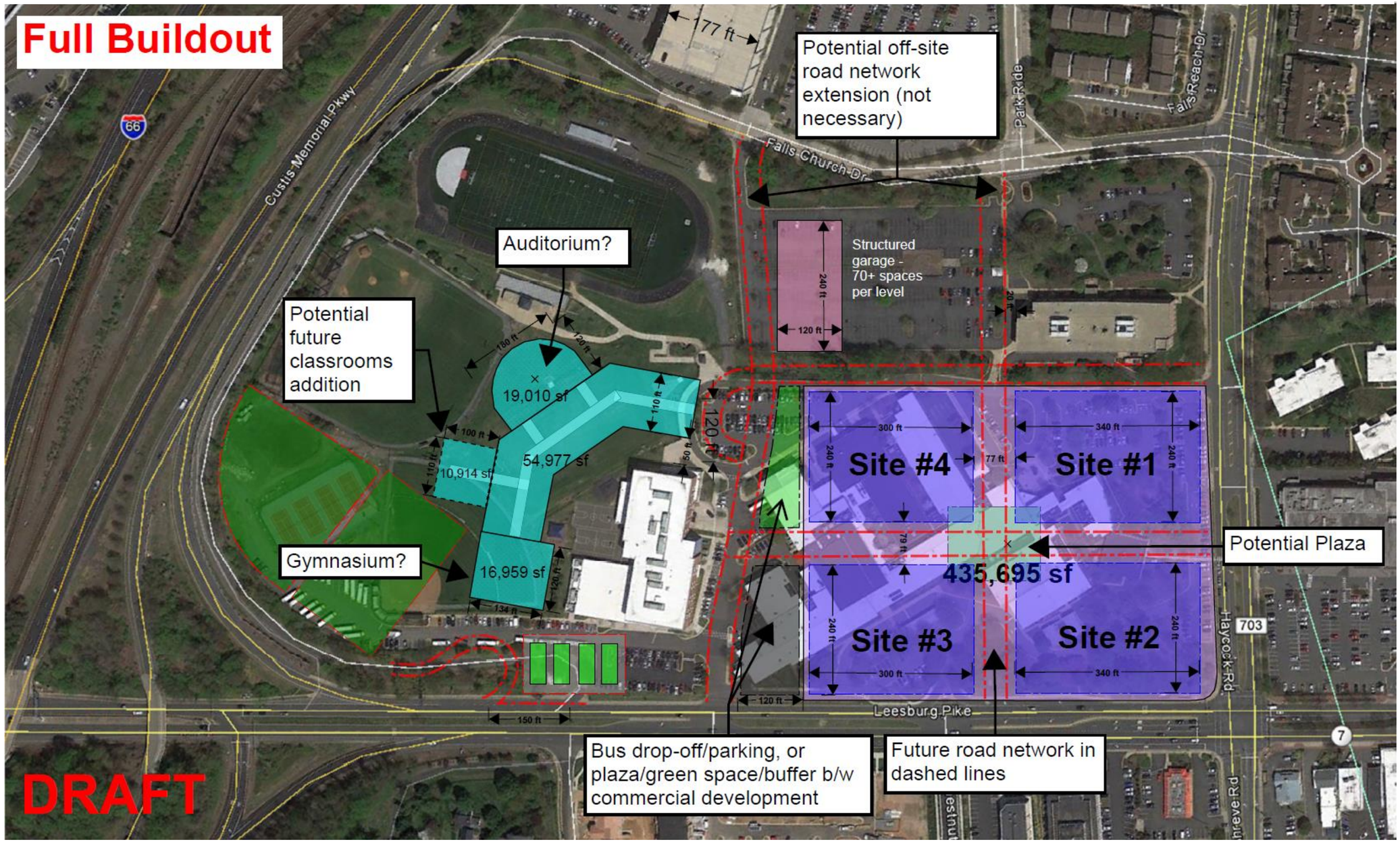
February 4, 2017 Community Meeting - Discussion Points

Discussion Topic #4: Economic Development Opportunities



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